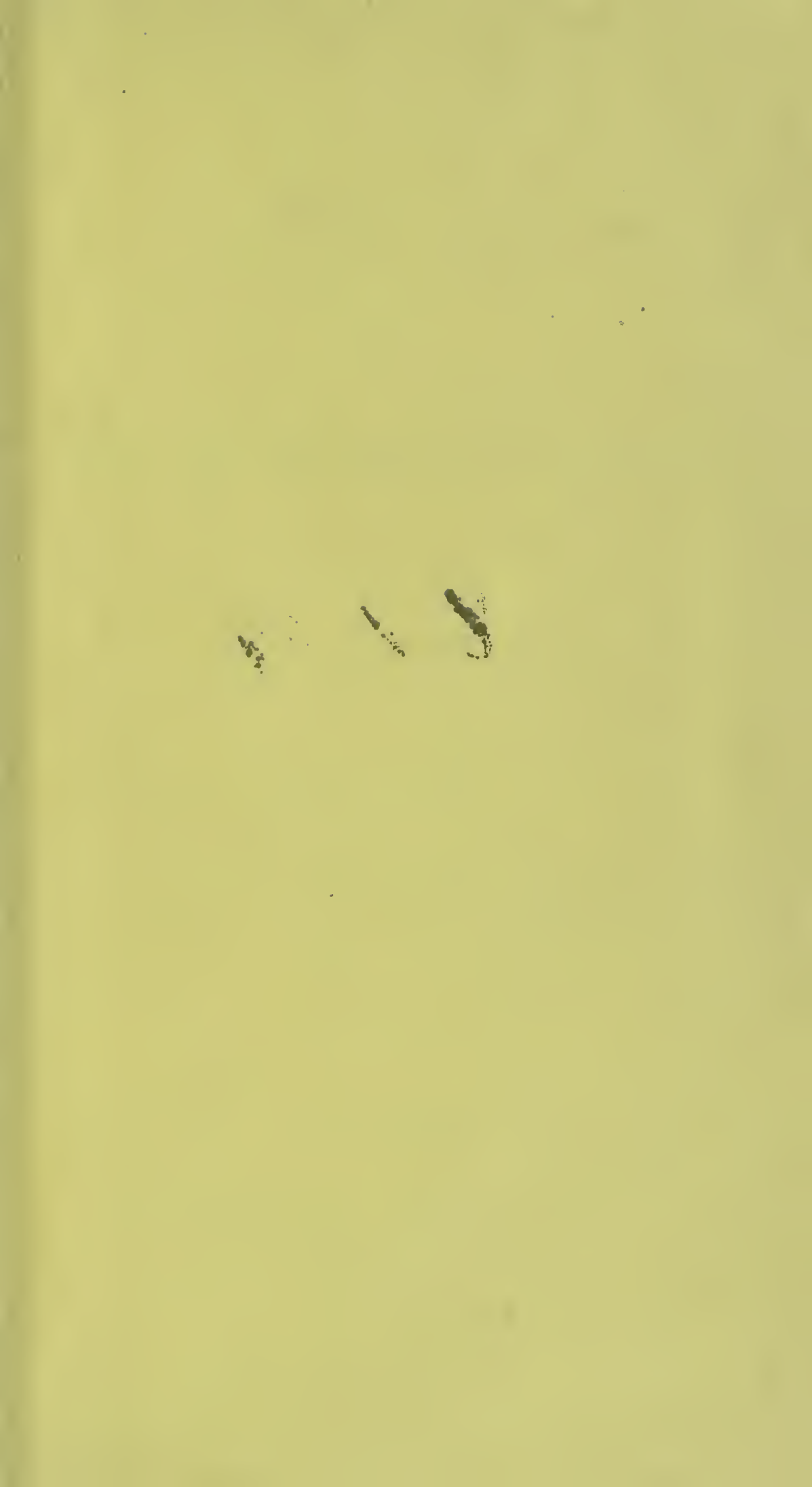


Or. 39



ESSAY

ON THE

USE OF ALCOHOLIC LIQUORS

IN

HEALTH AND DISEASE.

BY JOHN CHADWICK, M.D.

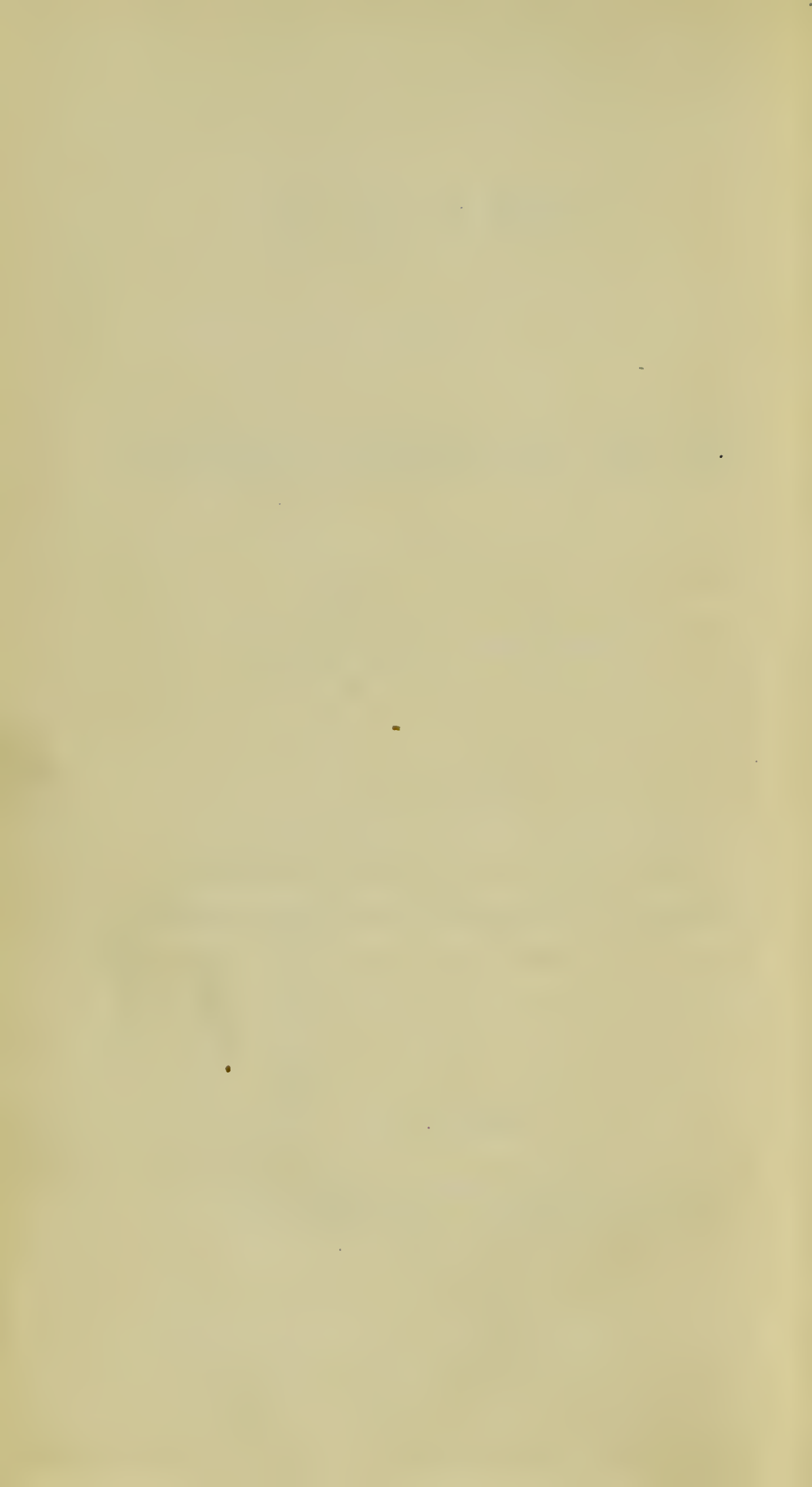
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P R E F A C E .

THE subject of this Essay has been continually before my attention, in the course of my experience in the practice of my profession, for many years. The efforts of the advocates of temperance, or rather of abstinence, have been also constantly bringing it under the notice of professional men, and of all other men, in this and other countries, for a long time.

What I have seen, read, and thought on the subject has convinced me, that a vast amount of mental and physical evil has resulted from the use of alcoholic drinks ; that by a vast number of members of the medical profession, and by the whole of the public, the true mode of action of these drinks on the human body is not known ; and that it is not correctly explained in any book specially devoted to the subject ; that there is no way of avoiding or of recovering from the evils produced by the habitual use of them, or from the habitual use of other medicines which stupify or stimulate the nervous system, such as opium, tobacco, coffee, and tea, saving their total disuse, except in their legitimate office

as medicines ; and that man loses nothing, but gains every thing that is good, in restricting himself to the beverage which an all-wise Creator has provided for him.

That the whole of the medical profession does not understand the effects of alcoholic drinks, is evident from the following extracts from two of the leading medical periodicals of the day :—

The last volume of the British and Foreign Medical Review, in a long article on the subject, commences with the following statement :—“ There are many reasons why we deem it incumbent upon our brethren of the medical profession, to take an active part in the investigation which is now being carried on by a large and not unimportant section of the public in this country and elsewhere, with regard to the effects of the habitual use of alcoholic drinks, and the possibility of effectually maintaining the “ *mens sana in corpore sano*,” without recourse to them. The fearful array of social and individual evils which may be traced to the *abuse* of fermented liquors, should lead every reflecting mind to consider how far the *use* of them is desirable or necessary ; and this enquiry is peculiarly incumbent upon those who assume to themselves the right of guiding the public in all that concerns the welfare of the bodily fabric, whether in health or disease. Their influence for good or evil in this matter can scarcely be too highly estimated. If they are able, after careful consideration of the evidence on each side, to give their sanction to the statements of the advocates of the total abstinence cause, that sanction ought

not to be withheld ; since its weight in the scale of social order and morality demands the open and unqualified expression of it, unrestrained by any fear of ridicule or loss of the world's approval. That they would *knowingly* place their influence in the opposite scale, cannot for a moment be admitted ; but there is too much reason to fear that, either from actual ignorance of what the experience of multitudes of all ranks and conditions has now demonstrated, or from a natural tendency to persistence in that sort of *laissez-faire* system which it is so easy to practice and (in this matter especially) so agreeable to their patients, the generality of medical men are at present lending their sanction to a system of most pernicious error. Having long since made up our own minds on the subject, we have determined not to forego this opportunity,—the last in our power,—of recording our earnest convictions in regard to it ; in the hope of leading our readers, if not at once, to view the matter in the light in which *we* see it after many years of observation and personal experience ; at any rate to enquire and observe for themselves, and to pause before they again recommend or sanction practices which, though comparatively innocent in themselves, aid in perpetuating the direst evils with which our country is infected.”

The last number of the Edinburgh Medical and Surgical Journal, April, 1849, in a review of a recent work of Dr. Day on the Diseases of Advanced Life, says, “ About wine, tea, coffee, and other liquors, physicians always become eloquent, and sometimes speak not a little nonsense. Dr. Day cautions against excess,

and thinks that, to those who have not indulged in the use of wine, it may be well to say, ‘Drink no longer water, but use a little wine for thy stomach’s sake, and thine often infirmities.’

* * * * *

“ In the whole of these directions regarding the use of wine for the aged and the invalid, there is some danger and not a little folly. One physician recommends for the aged invalid, Madeira ; another, Amontillado ; and a third, Madre di Xeres ; while a fourth tell his patients that port or tent, or some other vinous compound, is the grand remedy for his decaying tabernacle. What advantage have several of these forms of vinous liquor, except that they are expensive, and consequently unattainable by the humble invalid ? It appears to us that all are only different forms of poisonous articles, the use of which has been rendered necessary by the preposterous and pernicious habits of society. A man begins to take wine in early life, and, as he continues it as long as he can, without receiving any intimation of its bad effects, he is then given to understand that he has done himself and his health irreparable injury, but that if he stops he is sure to be made worse, and probably to die. Would it not be much better for all persons to be taught in early life, that wine is an indulgence both unnecessary and hurtful, and as the time must come when its use must be given up, it is best and safest not to begin at all ? Why should any habit, which is admitted on all hands to be bad, be either commenced, encouraged, or carried on ?

“ But why is the wine necessary ? Oh, says some sagacious person, it enables a man to digest his food, and is a pleasant tonic. If either of these statements were facts, then it might be reasonable to say, that the moderate use of wine is beneficial. In a large proportion of cases, however, these statements are not facts. Whenever wine is believed or felt to be necessary after taking food, it may be safely asserted that food, too much in quantity and improper in quality, has been taken ; and the same is still more decidedly true regarding spirits. First, after taking as much food, and eating as great a variety of articles as might serve for two, if not for three meals, wine or diluted spirits, and sometimes undiluted spirits, are taken, in order to enable the stomach, it is said, to perform its duty ; in other words, to obscure, stifle, and extinguish all those uneasy sensations which it is made to feel from being taxed far beyond its powers ; to render the individual insensible to those salutary warnings which, in the natural state, are intended to inform him that he has committed several serious errors in diet. Then, after two or three hours more, when other uneasy feelings begin to arise, he endeavours to allay and stifle them by the use of strong astringent liquors ; and, lastly, perhaps after committing another error in diet, he has recourse to some brandy and water, and then retires to a disturbed and restless sleep, with a stomach loaded to distension with food little or not at all digested.

“ Such a course of constant offence to a delicate, membranous, vascular, and nervous organ, cannot proceed long without causing

serious injury both to its functions and its structure, and through that to other organs and the system at large. And then the poor victim of all this self-delusion is told that he must not give up his evil courses, for the end of that man would be worse than the beginning. If this really be the fact, patients should be warned in time, while they have not yet proceeded irrecoverable lengths in this career of gastronomic stimulation,—that it is easier and safer not to begin, than, after having begun, to check this course. On the other hand, we must say this, that we have not witnessed from a gradual and judiciously-managed stoppage of the rations in the persons now referred to, those dreaded effects on which physicians love to expatiate.”

The efforts of the total abstinence advocates have lately obtained the signatures of three or four hundred medical men, many of them being men of high standing and eminence in the profession, to the following certificate :—

“ We, the undersigned, are of opinion—

“ 1. That a very large portion of human misery, including poverty, disease, and crime, is induced by the use of alcoholic or fermented liquors as beverages.

“ 2. That the most perfect health is compatible with total abstinence from all such intoxicating beverages, whether in the form of ardent spirits, or as wine, beer, ale, porter, cider, &c.

“ 3. That persons accustomed to such drinks, may, with perfect safety, discontinue them entirely, either at once or gradually after a short time.

“ 4. That total and universal abstinence from alcoholic liquors and intoxicating beverages of all sorts, would greatly contribute to the health, the prosperity, the morality, and the happiness of the human race.”

But there is one drawback from the value of such certificates, evident at once to all, that men will strain a point in regard to

their prejudices or convictions, in order to discourage so generally acknowledged and wide-spread an evil as that of intemperance, and will give their names to such a manifesto for the public, and yet will act themselves, and advise others to act, in violation of its principles.

On the other hand, there are men in the profession convinced of the soundness of total abstinence doctrines, who yet do not honestly carry them out in the treatment of their patients. For example, there never was an abler or more strenuous advocate of the principles of abstinence than the celebrated Dr. Gregory, formerly professor of medicine in the University of Edinburgh, in his public writings and lectures; and yet, in his commendatory preface to a translation of Dr. Faust's Catechism of Health,—the best popular work on the subject I ever saw, and itself also an abstinence book,—he says, “ People should be told, not always what is absolutely best in itself, but what is the best that they *can* or *will* do. For example, as to strong liquor, not abstaining from it altogether (as certainly would be the best,) but only getting drunk with ale or porter instead of whiskey and gin, which are absolute ruin to them in mind, body and estate.”

But it is high time that the public should be informed that medical science does not rest on authorities. Divines have an authority to appeal to in all their disputes, which, if *properly* consulted, would terminate all their differences: lawyers quote precedents

continually : but physicians always look to facts and experience. Whoever consults a medical book, must always bring to his guidance as a rule, in regard to every statement it contains,—is this matter of fact and experience ; or is it tradition, prejudice, whim, theory, hypothesis, or fancy ? And when two witnesses differ as to a matter of fact, he must consider which of the two is the most faithful and capable witness ; or he must experiment for himself, and be guided by the senses with which he has been furnished for the purpose. The statements found in histories of tribes and nations of men who have not used these drinks, as to their state of health, and the experience of the vast numbers of men in this and other countries who have abstained from them, are of more value than all the medical *opinions* ever published, as to whether they are necessary to health or not. And the books written by professional men and others on the temperance question, in which medical opinions, fancies, and theories are quoted indiscriminately as to importance, along with statements of facts and of experience, and preceded by statements as to the eminence and standing of the authors in the estimation of the profession or of the public, like the statements prefixed to the several lots in an auctioneer's catalogue, are by no means creditable to the writers of them.

It seems, then, that a correct explanation of the mode of action of these drinks on the human body, is needed both by the profession and by the public. But I should not have taken on

myself to attempt the task but for the following announcement ; and although I often had the matter in consideration, I did not actually begin my labour till November.

“ONE HUNDRED GUINEAS PRIZE ESSAY.—A Prize of One Hundred Guineas will be given for the best Essay on the use of Alcoholic Liquors in Health and Disease. The Essay must contain answers to the following questions :—

“1. What are the effects, corporeal and mental, of alcoholic liquors on the healthy human system? 2. Does physiology or experience teach us, that alcoholic liquors should form part of the ordinary sustenance of man, particularly under circumstances of exposure to severe labour or to extremes of temperature? Or, on the other hand, is there reason for believing that such use of them is not sanctioned by the principles of science, or the results of practical observation? 3. Are there any special modification of the bodily or mental condition of man, short of actual disease, in which the occasional or habitual use of alcoholic liquors may be necessary or beneficial? 4. Is the employment of alcoholic liquors necessary in the practice of medicine? If so, in what diseases, or in what forms and stages of disease, is the use of them necessary or beneficial?

“I. Each Essay must be accompanied by a sealed envelope, containing the real name and address of the author, and superscribed with a name or motto, similar to that attached to the Essay; only the envelope of the successful candidate to be opened by the adjudicators. II. It is desired (but this is not an essential point) that the Essay should not extend beyond 250, nor fall short of 120 pages of print of medium size in octavo. III. The Essay must be written in a clear, legible hand, on one side of the page only; and must be delivered to the undersigned address on or before the 31st day of December, 1848. IV. The successful Essay will remain the property of the donor of the prize, and will be published. V. The names of Gentlemen of the first literary and scientific talent, to act as adjudicators, will be shortly announced.

“Signed on behalf of the donor,

“CHARLES GILPIN.

“THOMAS BEGGS.

“London, 5, Bishopsgate Street Without,

“January 1st, 1848.”

When about to send in my Essay, my attention was directed to the following advertisement :—

“ONE HUNDRED GUINEAS PRIZE ESSAY on the Use of Alcoholic Liquors in Health and Disease.—Postponement of Adjudication.—The Adjudicators having

ascertained that due publication had not been given to the above prize, have recommended to the donor that an extension of time should be allowed. The period now fixed, and beyond which there will be no further extension, is Oct. 1, 1849. Candidates, who have already sent in their MS., may have them returned by application to C. Gilpin.

"A circular, containing the terms and conditions of the prize, may be obtained by application to the undersigned address.

"Signed on behalf of the donor,

"CHARLES GILPIN.

"THOMAS BEGGS.

"London, 5, Bishopsgate Street Without,

"December 21st. 1848."

Whereupon I wrote the following note and received the annexed reply :—

"Bury, 28th December, 1848.

"Sir,—I perceive, from an advertisement in the Times Newspaper of December 25th, that the adjudication of the 100 Guineas Prize Essay on Alcoholic Liquors, is postponed till October 1st, 1849.

"Now, on this I have three remarks to make, and one question to ask. 1st. It is a departure, by the donor, from conditions imposed and announced by himself. 2nd. The postponement is for a period of nine months. 3rd. I do not like an Essay, which I should have sent this day to your address, to lie useless in my desk for so long a time. Will you have the goodness to inform me, 'on behalf of the donor,' whether a printed book, with the author's name attached, will be received by the adjudicators in competition with manuscript Essays?

"Your obedient servant,

"JOHN CHADWICK.

"To Mr. Charles Gilpin."

"C. Gilpin is in *no* way accountable for the postponement of the decision on the Essays. Any application for *further* information than the enclosed prospectus gives, must be made to the adjudicators, as C. G. does not know what they will require except from the prospectus.

"London, 5, Bishopsgate Without, 1st mo. 1st, 1849.

"To John Chadwick."

The new "prospectus" was just like the first, save that the times of sending in the Essays was altered, and the names of the adjudicators given.

With regard to Temperance Societies, while no right-minded man can disapprove of their object, no right-minded man can approve of all the means they have taken to carry out their object. Vituperation and uncharitable judgments on medical men and publicans, will never convince them or win them over. And in regard to others, they should remember that they are calling on them to practise self-denial ; for their own good, indeed, but still to self-denial. Bacchanalian poets have written in the most exalted strains of the pleasures of wine, and those who have indulged in it have *felt* the truth of what they have written ; and it is useless to deny this, or to try to reason men out of the evidence of their own senses. A drunkard is still a man, and is not at all times the irrational beast he has been represented to be. And man must be influenced by motives, either of loss or gain, if he must be induced to practise self-denial. If a motive can be found to influence a man more strongly than the pleasure of drinking, then he will abstain from drink. Excitement is necessary to the happiness of man, and the excitement of working for daily sustenance, is the most abundant and permanent of all others. A man ought always to have before him some object of life, something to aim at, something to live for. A man that is lazy, rich, or disappointed, is sure to seek excitement which is bad for him. Hence nothing is so calculated to save a man from evil, as that he should choose wisely some object of life, and keep it always before him ; one worthy of a life's devotion, in which he will be liable to no disappointment, and which will lessen the desire for, and reduce to secondary importance all other objects.

Men avoid drunkenness, first and chiefly, because of the high price of drink ; and if drink were dearer, drunkenness would be less prevalent ; but this is a matter for the consideration of legislators. Another reason why men avoid drunkenness, and one which implies self-denial, is that it is incompatible with the pursuit of other objects. A man cannot work for his own support and that of his family, when drunk ; neither can he profitably dispose of his leisure time when in that state. And there are many objects to be attained in the world, for which a man will entirely forego the pleasures of drinking, *during their pursuit*. But as all temporary objects are vanity and vexation of spirit, why, in attempting to save man from *one* single sin, should any other motives be advanced to him than those held out in the Gospel of Christ ; who was called Jesus, because he should save his followers from *all* their sins ? Do the tee-totallers mean to say that Christianity cannot save men from drunkenness ? Or, do they hope that the light of their scheme will eclipse the “ true Light which lighteth every man that cometh into the world ? ”

BURY, LANCASHIRE, April, 1849.

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ESSAY
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USE OF ALCOHOLIC LIQUORS
IN
HEALTH AND DISEASE.

CHAPTER I.

*Sudden death from large doses of alcohol.—Mode of action.—
Death from concussion or shock.—Experiments on the lower
animals by Fontana, by Humboldt, by Brodie, by Percy.—
Cases in the human subject.*

WHAT are the effects, corporeal and mental, of Alcoholic Liquors on the healthy human system?

The effects of alcohol on the human body are various; and they differ according to the quantity taken; to the state in which it is taken, as to purity or dilution; and to the condition of the person who takes it, as to the state of his health, and as to whether he has been in the habit of taking it previously or not.

When taken pure or almost pure, and in sufficient quantity, it acts as a poison, and may produce death in a few minutes, or in the course of some hours

from the time of taking it; and when taken in smaller quantities for a length of time, it tends to shorten the duration of life, and may produce many different diseases which terminate in death.

We believe that its mode of action, when it produces immediate death, may be best understood by considering its effects on the lower animals, when those effects have been produced in them in the way of experiment. M. Fontana (see Duncan's Medical Commentaries for 1787, p. 114,) found, from experiments made on guinea-pigs and other animals, by giving spirit of wine internally—by injecting it into the anus, into the cavity of the abdomen, and into the cellular membrane, that it killed them. He found that when injected into the veins of rabbits,—if rectified, it killed them in an instant,—if diluted with water, it produced heaviness and convulsions. He also tried several experiments on cold-blooded animals, particularly leeches, turtles, and frogs. Leeches immersed in alcohol, died in a very short time: when only one half of the leech, whether the head or tail half, was plunged into the fluid, that half alone died. On turtles he found it to “act violently,” whether taken by the mouth, or injected into the rectum or cellular tissue. He found that frogs were speedily killed by spirit, when injected under the skin.

Mr. Humboldt (Annals of Medicine, 1799, p.

265,) also tried experiments with spirit, and tested its effects by means of galvanism ; and says, “ when the crural nerve of a full-grown and lively frog was immersed in alcohol, if the leg was already exhausted by galvanization, the alcohol evidently increased its excitability ; and this increase was lasting, *when it was quickly removed from the stimulating fluid*. If it was *left in it for some time*, it was completely exhausted. Its application exhausted instantaneously the excitability of young animals—birds, worms, and insects. If the tail of an earth-worm or leech be dipped *only four seconds* in alcohol, it becomes stiff and inexcitable as far as it is immersed ; and although in frogs and puppies this state of rigidity could sometimes be removed, in these animals it never could. Notwithstanding this, he says the other part of these creatures would live several days.”

Sir B. Brodie (Edinburgh Medical and Surgical Journal, vol. 8, p. 453,) says, “ the effects of spirits taken into the stomach of a rabbit, were so instantaneous, that it appeared impossible that absorption could have taken place before they were produced.”

Dr. Percy, who tried similar experiments, says, that sometimes “ total loss of sensibility and voluntary power so instantaneously followed the introduction of the poison into the stomach, that we cannot conceive that absorption to a sufficient extent could possibly have been instantaneously effected.”

Cases are to be met with in medical books on poisons, where death has been produced immediately in human beings, by a large quantity of strong spirit taken at once. Dr. Christison says in his work on Poisons, p. 848, (3rd edition,) “a case is briefly alluded to by Orfila of a soldier, who drank eight pints of brandy for a wager, and died instantly. A case of the same kind is quoted by Professor Marx. Similar accidents occur not unfrequently in this country; but I have not met with any fully described by authors.”

Now, it is plain from these facts, that alcohol in sufficient quantity and strength, can so act on the animal body as to produce immediate death. It is known, also, that alcohol can be applied to the animal body in such small quantity as to act as a stimulant, or, in other words, so as to cause the vital energy to be manifested with greater activity. Indeed, this is seen from the experiments above quoted of Mr. Humboldt; for he found, that if the part of an animal was acted on by a small quantity, or, in his words, “when it was quickly removed from the stimulating fluid,” its excitability was increased. This is a law common to the action of many agents on animals. For example, mechanical injury when slight, is stimulating; when severe, quickly fatal; electricity, the same; cold and heat, the same. It is further known, that severe injuries

acting on certain parts of the body—namely, the brain, or parts supplied by the sympathetic nerve, such as the stomach or other viscera of the abdomen—speedily cause death. It is notorious, indeed, that a blow on the head, or over the stomach, may kill a man instantly. And if four seconds be time enough for alcohol to destroy life in such portion of a leech or earth-worm as may be *immersed in it*, how must it be with an animal of more intricate organization, all the parts of which are so closely connected with one another by sympathy, *into whose stomach* a large quantity of strong spirit has been received? The stomach must be deadened by it, and being liberally supplied with branches of the sympathetic nerve, the whole body must be killed also. This, we believe, is the mode of death from large quantities of spirit taken quickly into the stomach undiluted. This mode of death is called by medical writers, death by syncope, or death by failure of the powers of life.

CHAPTER II.

Death from alcohol in the way of coma.—Failure of respiration.—Experiments of Brodie.—Case from Dr. Ogston.—Symptoms and post-mortem appearances of death by asphyxia identical with those from alcohol when it acts as a narcotic.—Redness of inner coat of the stomach, not from inflammation, but from congestion.—Quantity of spirit required to produce death.—Accidental death when intoxicated.—Efforts of nature and of art to prevent death.—Occasional sudden appearance of dangerous symptoms in the course of a drinking-bout.—Absence of post-mortem appearances in cases of sudden death from alcohol.—Treatment of persons in a state of coma from alcohol.—Caution requisite in the employment of venesection.—Dangerous and fatal symptoms.—Alcohol to be found in, and separated from, the brain after death of persons poisoned by it.—Absorbed into the circulation by the veins.

BUT alcohol may be taken in quantity sufficient to cause death, without producing its effect immediately. In fact, when it does not kill a person by its direct effect on the stomach, and the consequent shock to the whole body, it may, nevertheless, be absorbed into the blood, and conveyed in the course of the circulation to the brain, and then cause death by depriving that organ of its sensibility.

There is no function of living beings so immediately essential to life as that of respiration, or the action of oxygen on the vital fluid. In animals

which breathe by lungs, death is soon produced by preventing the ingress of atmospheric air to those organs. And it matters not whether this be brought about by mechanical impediment,—as by hanging, drowning, or by any other mode of suffocation, or by any mode of frustrating or destroying the nervous sensibility, under whose influence air is supplied in those animals. There is a portion of the brain, called the *medulla oblongata*, which is inseparably connected with the function of breathing. This portion of the brain is connected with the respiratory organs by means of nerves. And if this connection be destroyed by division of these nerves, the nervous influence is frustrated, and respiration ceases. It ceases, also, if the sensibility of this portion of the brain be destroyed by mechanical injury, or by the action of any narcotic agent upon the brain. And, of narcotic agents, none acts with greater certainty than alcohol.

Sir B. Brodie (Edinburgh Medical and Surgical Journal, vol. 8, p. 453,) says, “seven drachms of proof spirits were injected into the stomach of a young rabbit. Two minutes afterwards, he evidently was affected by the spirits; and in three minutes more, he lay on one side motionless and insensible. The pupils of the eyes were perfectly dilated; there were occasional slight convulsive motions of the extremities; the respiration was laborious, it

was gradually performed at longer and longer intervals, and at the end of an hour and fifteen minutes had entirely ceased. Two minutes after the animal was apparently dead, I opened into the thorax, and found the heart acting with moderate force and frequency, circulating dark-coloured blood. I introduced a tube into the trachea, and produced artificial respiration by inflating the lungs, and found that by these means the action of the heart might be kept up to the natural standard, as in an animal from whom the head is removed.

“It would appear from the experiments that I have just detailed, that the symptoms produced by a large quantity of spirits taken into the stomach, arise entirely from disturbance of the functions of the brain. The complete insensibility to external impressions, the dilatation of the pupils of the eyes, and the loss of motion indicate, that the functions of this organ are suspended; respiration, which is under its influence, is ill performed, and at last altogether ceases; while the heart, to the action of which the brain is not directly necessary, continues to contract, circulating dark-coloured blood for some time afterwards.”

That alcohol has the same action on the human subject, may be seen from the following case from a valuable paper by Dr. Ogston, of Aberdeen, published in the Edinburgh Medical and Surgical

Journal, vol. 40, p. 281 :—" Case 5 was a woman of the name of Mary Robertson. In February last year, her husband fearing that the child which she was nursing might suffer from her intemperate habits, had it sent to nurse ; on which she became so disconsolate, that to cheer her, he one evening presented her with a bottle of spirits ; and of this she and a neighbour took one or two glasses before going to bed. Her husband, who slept in an adjoining room, waking at three in the morning, recollecting that she had left the bottle in a cupboard in her bed-closet, and fearing that she might rise and take more of it, went to remove it out of her reach, when he found her stretched above the bed, with the bottle empty in her arms, and herself unconscious, and breathing heavily. I was soon after called, and found her in the state described. A little of the liquor stained the bed-clothes, but whether spilt or vomited could not be known. She died in a quarter of an hour after the visit.

" At three in the afternoon of the same day, another medical gentleman and I were desired to inspect the body, in order to report the cause of Robertson's death.

" The surface was then generally very pale, with the exception of the lower part of the face, which was slightly livid, and the lips, which were blue. The mouth was twisted a little to one side ; the

tongue pushed out between the front teeth, which were clenched on it, the protruding part being livid ; the head was somewhat swollen, with an appearance of anxiety about the countenance. In one or two points on each cerebral hemisphere, small quantities of clear serum were found effused under the arachnoid coat, which was slightly opaque in these situations. In the lateral and posterior parts of the brain, the veins were turgid with blood of a violet hue, and stood out in full relief from the surface ; nearly two ounces of serum in the ventricles, of a reddish colour ; a few dark points on cutting into the brain, whose substance was firm and remarkably healthy.

“ Some spots of dull-coloured redness on the interior of the air passages, which contained a little frothy mucus. Both lungs dilated, dark-coloured externally, particularly the right ; and when cut into, frothy mucus and dark fluid blood were pressed from them (the latter in considerable abundance,) especially from the right lung. Portions of the lower lobe of the right lung, were hepatized ; but when the blood was pressed from it, they floated when thrown on water. No fluid in the pericardium ; coronary veins turgid ; *venæ cavæ*, right auricle, and right ventricle, full of dark fluid blood ; left auricle empty ; left ventricle in part filled with blood of the above character ; and a small quantity

of the same was discovered in the thoracic aorta ; abdominal aorta empty.

“Liver large, firm, greyish on its exterior, but internally of a gamboge colour. From its incisions dark fluid blood could be pressed in considerable quantity. Some reddish fluid effused into the abdominal cavity ; gall-bladder full.

“The stomach was remarkably small ; its pyloric half did not at all exceed the diameter of the duodenum, from which it could scarcely be distinguished ; and near the cardiac extremity, its diameter (which was there greatest) was little beyond this. The *rugæ*, on its interior, were of a dull vermilion tint. The mucous coat of the stomach was soft, easily torn, and readily separated from the others, and had a few dots of effused blood, of a cherry-red, underneath its surface. The duodenum had contracted strong adhesions to the pancreas, which, in the vicinity of these, had a full rose hue. The peritoneal coat of the small intestines was reddened throughout ; the redness becoming darker (almost livid) at the lower extremity of the ileum. The larger intestines were empty of feces, but distended with gas.”

In illustration of the effects of the narcotic influence of spirit in stopping respiration, we cannot do better than draw attention to the mode of death by asphyxia ; or, as it is called by medical writers,

“death, beginning at the lungs.” It is essential to the discharge of the function of every part of the animal body, that every part should be supplied with arterial or oxygenated blood. This supply is cut off by suffocation, as effectually as if the animal were bled to death. For it has been established by the researches of Dr. Kay Shuttleworth, of Dr. Williams, and of Dr. Alison, that when respiration ceases, the blood ceases to pass through the lungs ; and that it accumulates in those organs, in the right-side of the heart, in the veins, and by consequence, in the brain and in the abdominal viscera. Examination after death shews that the lungs are gorged with black blood ; also, the right-side of the heart, the large veins, the liver, spleen, kidneys, stomach, and bowels. Dr. Ogston says, “ the eyes are prominent, the pupils dilated, the face swollen or livid, the lips blue, the cellular tissue vascular, its blood fluid and dark, redness in the air-passages, the lungs dilated, and an accumulation of dark fluid blood, along with more or less of a frothy mucus in their substance. The right cavities of the heart, the *venæ cavæ*, and the pulmonary artery, filled with blood of the same character, with its presence, but in less quantity, in the left ventricle, coronary veins, and *aorta*, while the liver and kidneys contain in considerable quantity the same dark fluid, which is best shewn on squeezing them in the hands.

Within the cranium, in addition to the effused serum, we find dark blood in the veins and sinuses, or even in the substance of the brain." From this we see that alcohol acts by affecting respiration, in the same way as it is affected in suffocation produced in any other way. The redness of the inner-coat of, and the extravasation of blood in, the stomach, which we have seen occurred in the case of Robertson, quoted from Dr. Ogston's paper, has been supposed to be caused by the direct irritating effect of the spirit on the stomach; but that it is caused by the stoppage of respiration, is proved by a paper of Dr. Yelloly, in the 4th vol. of the *Medico-Chirurgical Transactions*. He found it in the stomachs of five criminals who were executed by hanging, when they were in a state of perfect health. He also found it in the stomachs of persons who had died of apoplexy, and of disease of the chest; in both of which we believe the patients would die in the way of asphyxia. The same redness of the stomach is also met with after death from opium (another narcotic poison,) and which also acts by checking respiration; as has been shewn by the fact, that in one instance in the human subject, and in many in the lower animals, life has been saved by artificial respiration kept up till the action of the poison had passed off.

Dr. Ogston gave in his paper a tabular view of

twenty-six cases of poisoning by spirit; and in it we find the symptoms corresponding with the interruption, more or less complete, according to the degree of insensibility, of the function of the lungs. In two of the twenty-six cases, the insensibility amounted only to stupor; while in the other twenty-four, the patients were in a state of coma; in twenty three—of “profound coma.” The breathing was slow in thirteen cases; in one so slow as seven inspirations in the minute, and yet this case was not fatal. In poisoning by opium (another narcotic poison) the inspirations have been seen as low as four in the minute, and yet the patient has recovered. It was laborious in four cases (three of these being fatal;) stertorous in six; in one, rapid; and in one, calm. The blood being intercepted in its passage through the lungs, we find the pulse—imperceptible, in nine cases; in seven, feeble; in six, slow; and frequent in two only, “It never approached hardness or strength.” “I may add,” says he, “that I have invariably observed, that when persons after drinking are seized with coma, the pulse at first is extremely slow.” In eighteen cases, the extremities were cold; while in eight they were warm.

He says, “it may be remarked that the flushing of the face, in more than one instance, occurred in cases when the character of the pulse was that of

marked feebleness or slowness; while the same thing was observed in some cases, although the pulse was *wanting altogether* at the wrist." Now, this flushing of the face, must have been from venous turgescence, just as we see it in other cases where the respiration is hindered. Thus we have seen that alcohol, when it kills a person by its narcotic action, does so by stopping respiration, through insensibility.

The smallest quantity of spirit which can destroy a man in this way, has not been ascertained; and must be very different in different cases. Dr. Taylor states in his Medical Jurisprudence, p. 277, that a boy, aged seven years, has been killed by taking two wine-glassfuls of brandy.

But persons having been made senseless and helpless by drink, are liable to lose their lives by accidents, who would otherwise recover from their insensibility. Thus, a man may fall down out of doors, and die from exposure to cold; or he may fall into the fire, and be burnt to death; or he may fall over a precipice, and be killed, or into the water or mud, and be drowned. He may fall asleep, and, getting his head into an awkward position, be strangled by his own neck-cloth; or, the contents of his stomach, half-vomited, may get into his wind-pipe, and suffocate him.

On the other hand, many persons having taken a

sufficient quantity of alcohol to destroy life, are saved by the efforts of nature or of art. Dr. Ogston says, "that intoxication does not oftener terminate fatally, arises from these amongst other causes. The stomach, in one case, by the occurrence of spontaneous vomiting, relieves itself from the whole or part of the poison, and after a few hours of coma, slow breathing, and feeble or absent pulse, the person recovers. If the alcohol have been recently swallowed, the recovery of consciousness may be immediate—the respiration becoming free—the heat returning slowly to the extremities, and a considerable reaction taking place. The same thing is observed when the alcohol has been removed artificially, the return to health being less immediate when time has been afforded for part of it being absorbed."

Dr. Christison says, p. 846, "in cases of simple poisoning, in the second degree, the progress of the symptoms is on the whole remarkably uniform, gradual, and uninterrupted. But there are, likewise, some anomalies which it would be well to notice. Thus, occasionally after the phenomena of ordinary intoxication have gone on gradually increasing without having attained a very great height, sudden lethargy supervenes with singular rapidity. My colleague, Dr. Alison, has communicated to me the particulars of a case of the kind, where death took place from simple intoxication, twenty minutes

after the state of lethargy began. The individual reached his house in a state of reeling drunkenness, but able to speak and give an indistinct account of himself. He then became lethargic, and died in the course of twenty minutes. On examining the body, Dr. Alison could not discover any morbid appearance, except some watery effusion on the ventricles; but the contents of the stomach had a strong smell of spirits." Now, this absence of post-mortem appearances in such rapid cases, is common to many kinds of sudden death,—such as from concussion of the brain, from fainting, and from mental emotion of various kinds. In cases of rapid poisoning from spirit, we should expect to find no evidence of the cause of death, on a post-mortem examination, except the presence of the poison in the stomach; and this only when the body is examined soon after death. In regard to the sudden supervention of coma in the course of intoxication previously gradual, it seems analogous to what is often seen by medical men in the course of their practice in various diseases. For when a man is wasting from a chronic disease, we cannot foretell when, or how rapidly, sinking may come on. And in acute diseases, we cannot say how long, or how much, a man may suffer before his strength fails.

With regard to the treatment of persons in a state of coma from alcohol, the indications are sufficiently

obvious. The stomach must be emptied of its contents. Irritants, such as sinapisms, must be applied to the surface of the body. The head must be placed in an elevated position ; and warmth must be applied to the extremities. We know that alcohol is a very volatile fluid, and that it evaporates rapidly at the temperature of the human body ; and we also know that in the capillary vessels of the lungs, it is exposed to a very extensive surface of air in the cells of the lungs, in the course of the circulation of the blood ; and we have evidence of its evaporation out of the blood in these cases, in the strong spirituous odour of the breath of the patient. We know, also, that it is separated from the blood in the secretions of the body, since it has been detected, by chemical analysis, in the bile and urine. We may expect, therefore, that the spirit will escape from the body, by these different outlets in the course of time, if the patient survive. We have had occasion to witness several cases of this sort in the course of practice, and have invariably found that some degree of consciousness has returned in the course of eight or twelve hours from the time of emptying the stomach.

We were called, about ten o'clock, one night, to a large and powerful man, who, in the course of a drinking-bout, had undertaken to swallow a pint of whiskey at once, and who was soon afterwards in a

state of coma. A large quantity of fluid, smelling strongly of whiskey, and mixed with a ropy mucus, was taken from his stomach, and he was carried home and put to bed. His breathing was stertorous, and he could not be roused to any degree of consciousness; but he was so far short of complete coma, as to feel irritation and be excited to cough by the presence of mucus in the larynx. On going to his house in the morning, about nine o'clock, we were just in time to see him walk off to a public-house to get more whiskey.

As to the employment of blood-letting in these cases, it should be used with great caution, as we think is proved by the following case. A pensioner, about seventy years of age, being troubled with lumbago, and wishing to cure it, procured three half-pints of gin, strong as it comes from the distiller, for that purpose. Between eleven o'clock in the forenoon and half past twelve, he drank the first two half-pints, and part of the third; when he became quite comatose. We saw him a little before one o'clock, and by means of the stomach-pump, withdrew from his stomach about a pint of what appeared to be gin. He was then placed on a sofa near a large fire—was well covered, and had warmth applied to his feet. His pulse was about natural, his extremities cold, his breathing slow and attended with loud rattling of mucus in the air-tubes;

his face was bloated, his lips livid, his eyes much injected with blood, his pupils dilated, and he was quite senseless. From the full state of the vessels of the conjunctiva, we feared apoplexy, and therefore bled him to ten ounces, with the effect of quickening the pulse in some degree, and of lessening the swelling of the face. We saw him repeatedly afterwards without noticing any change, till eight o'clock, when we found his pulse remarkably quickened; and, on enquiry, learnt that he had been seen by another surgeon, who said that he was apoplectic, and who bled him a second time. At ten we found his pulse still quicker, and a copious clammy sweat on the skin. At midnight we were sent for again, to use the catheter for him: he had become sensible—had asked for, and spoken to, his wife; but his pulse was still quicker, the sweating continued, he was very restless, and continually wanting to be moved on the sofa. He died at two o'clock—thirteen hours after he first required assistance. The coroner did not require a medical opinion at the inquest, and there was no examination of the body. We believe that if this man had not been bled a second time, the case would have terminated differently. On this point we quote Mr. Bedingfield, (*Edinburgh Medical and Surgical Journal*, vol. 12, p. 493,) who saw many cases of poisoning with ardent spirit at the Bristol Infirmary:—"Venesection

tion, in the early stages of the affection, seems to be especially indicated, as there is always a considerable determination of blood to the brain ; I have, however, seen it employed to a great extent without any manifest advantage ; more frequently it has proved injurious. From all that I have observed, I am arrived at the following conclusions :—If we can excite full vomiting, we shall save our patient ; if we cannot, he will have a better chance of recovery if we leave him to the operations of nature, than if we bleed him, agitate him, endeavour to make him walk, or in any other way disturb him.”

As to the period of death, during this state of coma, it has been various ; and the cases published furnish us with no means of giving a general opinion. On this point, we must judge from the symptoms and progress of each case as it occurs. Mr. Bedingfield says, “upon the first arrival of the fleets from the West Indies, men are frequently brought into the hospital in a state of total insensibility produced by drinking rum. The precise quantity swallowed can seldom be ascertained, as it is procured by boring holes into the casks, and sucking the liquor through straws or small reeds. The degree of danger from intoxication may be best estimated by the irritability of the iris. If the iris retain its contractile power, the patient will generally recover, however overpowered his senses may be ; if, on the

contrary, it remain in a state of extreme dilatation when a light is directed upon it, but a feeble hope of recovery must be entertained. The paralysis or immovable dilatation of the iris, is, for the most part, attended with apoplectic stertor, laboured and imperfect respiration, and a slow oppressed pulse. The power of the stomach is also lost, the strongest emetics being insufficient to excite it into action. Next to the insensibility of the iris, want of energy in the stomach indicates the greatest danger."

It has been found on post-mortem examinations of persons killed by alcohol, that the spirit was discoverable in the brain.

Dr. Cooke (Nervous Diseases, p. 221,) says, "I am informed by Mr. Carlisle, that a few years since a man was brought dead into the Westminster Hospital, who had just drunk a quart of gin for a wager. The evidences of death being quite conclusive, he was immediately examined; and within the lateral ventricles of the brain was found a considerable quantity of a limpid fluid distinctly impregnated with gin, both to the sense of smell and taste, and even to the test of inflammability. The liquid appeared to the senses of the examining students as strong as one-third gin to two-thirds water."

Dr. Ogston says, "the presence of alcohol has been detected in the ventricles of the brain, several

cases of this kind being on record. Doubts, however, having lately been thrown on the accuracy of these instances, I am happy to be able to add one to their number. The body of a woman, æt. 40, of the name of Caltie, who was believed to have drowned herself in a state of intoxication, was found on the 23rd of August, 1831, in the Aberdeenshire Canal. In company with another medical man I was requested to examine the body, in order to report the cause of death, no one having witnessed the act. In addition to the usual appearances in drowned persons, we discovered nearly four ounces of fluid in the ventricles, having all the physical qualities of alcohol, as proved by the united testimony of two other medical men who saw the body opened, and examined the fluid."

Wepfer, in his book "De Affectibus Capitis," gives an account of a man, who was knocked down and suddenly killed by a blow of the fist on the right temple, when he was drunk. On opening the head, a vast quantity of serum, smelling like wine (*"vinum exacte redolens,"*) together with some blood, flowed out of it.—(p. 7.)

During our attendance on the clinical lectures on medicine, in Edinburgh, in 1837,8, a man died in the Infirmary of delirium tremens, under the care of Dr. Christison; and on giving a lecture on the case afterwards, the Professor shewed to his class

spirit, which he had separated from the man's brain by distillation.

Dr. Percy published a thesis, in 1838, from which we find that he separated alcohol from the brain, liver, blood, bile, and urine, of animals which he had poisoned by that fluid. He also found that it could be got in greater quantity from the brain, than from an equal bulk of any other part of the body; and hence justly inferred, that there is some peculiar affinity between nervous matter and that fluid.

In an article in vol. 24, British and Foreign Medical Review, p. 544, it is stated, "theory would teach us that through such a thin septum the alcoholic fluid, being thinner than the blood, would pass towards the latter by endosmose; and experiment fully confirms this view, since it was found by Sir B. Brodie, that alcohol exerts in strong doses its usual effects upon the system, even though the thoracic duct be tied; and MM. Bouchardat and Sandras have obtained evidence of its presence in the blood of the gastric veins."

CHAPTER III.

Alcohol as a stimulant.—Use of it in severe and protracted exertion.—Injuriousness of such severe exercise.—Use of it in a state of mental depression.—Reasons for its habitual use.

BUT alcoholic liquors, like other poisonous agents, when prescribed medicinally by a competent medical adviser, may be so used as to act beneficially. We have seen evidence of their stimulant action in a quotation from Mr. Humboldt, in which we find that they may be so used as to stimulate parts exhausted by galvanism, and to restore, in some degree, their excitability. It is this stimulant action which we endeavour to bring into play when we employ these agents as medicines; and we see the benefit of it in the last stage of some wasting chronic diseases, in relieving the feelings of languor and exhaustion which are then felt, and in the increased appetite and digestive power which their action on the stomach produces, and through which existence is prolonged in many cases.

There can be no doubt, also, that in healthy persons, and particularly in those who have been habituated to their use, in cases of extreme and protracted muscular exertion, when, notwithstanding feelings of great exhaustion and fatigue, one effort

more is necessary for effecting an object, the body may be so stimulated by their use as to be able, for a time, to act with greater energy than it could do without such aid. Dr. Hooker (British and Foreign Medical Review, vol. 24, p. 534,) says, "I know of only one occasion on which the spirits appeared indispensable, and that was when a little more exertion at the crowning of a mighty and long-continued effort, was demanded. Thus the ship, when sailing in the pack-ice, is sometimes beset, or falls to leeward into the lee-ice. This takes two or three minutes ; but, if there is much wind, it takes many hours to get her out. Not being in command, the sails are of no use, and the ice prevents her moving in any way but with it to leeward. Under these circumstances, the only way to get her out is, by fastening ropes from the ship to the larger masses of ice, and warping her out by main force against the wind. Now, I have seen every officer and man in the ship straining at the capstan for hours, through snow and sleet, with the perspiration running down our faces and bodies like water. Towards the end of such a struggle—at the mighty crowning effort—I have seen a little grog work wonders. I could not have drank hot coffee without stopping to cool ; nor, if I had, do I think it would have supplied the temporary amount of strength which was called for, *on the spot*, under circumstances like this." But

we know that such fits of severe and protracted exertion are very injurious to the body ; and that if habitually or frequently put forth, the body must be weakened, and the duration of life shortened. We believe, also, that, in persons who have not been accustomed to them, such stimulants are not needed, even under these circumstances : for, on the one hand, we see that when the use of them has become habitual with a man (and this even after the total disuse of them for some time,) when such a man has to make any severe or protracted mental or bodily effort ; or, what is tantamount to it, when he is subjected to any strong mental or bodily feeling from any cause, an almost irresistible craving for them comes on, together with an intuitive belief that without them, strength will sink.—On the other hand, we know that the desire and will to accomplish an object, are the proper and natural, and generally a sufficient stimulus to the required exertion, without the aid of adventitious stimulation. We see a person without these agents, when called on to nurse a beloved relation in dangerous illness, endure an almost incredible amount of anxiety, sleeplessness, and fatigue. Without them, a game-cock will fight as long as life lasts ; and a horse or hound will run till he falls down dead.

From the effect of alcoholic drinks, too, in making glad the heart of man, they are used with advantage

at times, when the mind is depressed with grief, or disappointment, or affliction of any kind, or oppressed with care and anxiety. But their use for this purpose is very hazardous, ought to be very rare, and is quite unnecessary to any one whose mind has been enlightened by the Christian religion; seeing that it, in the hopes, encouragements, and promises which it holds out to those who embrace it, is a remedy for all these evils, of a far different and better, because effectual and lasting kind.

Nevertheless, from the exhilarating effects of these drinks; from their power of increasing the appetite for food; from the assistance they give to the powers of digestion; from their stimulation of the various passions and feelings of the human heart; and from the circumstance that present pleasure is the chief and immediate object of life in most persons; they have come to be in daily use in this country. The result of this has been a vast amount of evil; and we shall now proceed to inquire into this, as it affects health, corporeal and mental; and, by consequence, the duration of life.

CHAPTER IV.

Diseases caused by the use of alcohol as a stimulant and narcotic.

—Intoxication.—Quantity of drink required to produce it.

—Rapid and slow drinking.—Effect of habit.—Obesity.—

Gout.—Diseases of the nervous system.—Inflammation of the brain.—Epilepsy.—Delirium tremens.—Apoplexy and paralysis.—Insanity.—Mental and moral evils of drinking.

THE most common, familiar, and direct effect of alcoholic drinks is simple intoxication. The symptoms and feelings of this state are sufficiently well known to most persons, and need not be detailed here. Dr. Trotter, in his essay on Drunkenness, has described them very well; and his book we believe is the best yet published on the subject. Dr. Macnish has also graphically given them, in the third chapter of his Anatomy of Drunkenness; and has gone more into the feelings of the state than Dr. Trotter.

The quantity of drink necessary to produce this effect, is very different in different persons; and ranges from one glass to three bottles of wine; from one pint to two gallons of beer; and from one to thirty glasses of spirit and water.

When a man is said to be dead-drunk, the stimulant effects of the drink are quite superseded by the narcotic ones, and these go off, when the spirit has

had time to make its escape by the different outlets of the body;—or, when they are overcome by thirst, or other symptom of the fever which follows a debauch. The narcotic effects in general come on gradually in the progress of the drinking; but are liable at times to come on suddenly and unexpectedly. They are of course deferred by drinking slowly, by taking weak drink, or by interrupting the course of the drinking by taking a meal. They are hastened by drinking quickly, or of strong drink, by drinking alone, or in bed, or by exposure to cold. In the case of *opium*, which is another narcotic agent, and which is used as a mental stimulant, in small doses; whenever we wish to ensure its stimulant action, it is necessary to take it immediately before making a mental effort: for example, if the person using it be a public speaker, he must take it just before he begins to deliver his oration. The same dose which would act as a soporific at bed time, will then act as a stimulant. Also, when a poisonous dose of opium has been taken, we have to prescribe exercise, and every other means which can keep the person awake, in order to retard or prevent altogether its narcotic action. Likewise, in the case of alcoholic drinks, although they always tend more or less to produce feelings of drowsiness and indolence, it is far safest to take them before or during active exercise. And this, no doubt, is the reason

why men of active habits can take so much more of these stimulants, and for so much longer a period of life, than others who are more inactive, or who drink chiefly before going to bed. For, we believe, that however small a quantity of drink be taken, if it be taken on going to bed, it acts more or less as a narcotic.

The effect of habit, in enabling a man to take a large quantity of drink without being intoxicated, is truly wonderful ; and the effect of frequent intoxication, in enabling a man when intoxicated to take care of himself, is not less so. A healthy man, unaccustomed to the use of alcoholic drinks, is soon made drunk by them ; and, when drunk, does many bad and foolish things, and meets with many accidents, which a more seasoned vessel avoids. His constitution also resents the injury which has been done to it by the drink, in a way and in a degree which the habitual drunkard is a stranger to. He awakes on the following day in a high state of fever : his head aches and throbs, his tongue is dry, his stomach loathes and rejects every thing, and especially the drink which has made him ill. But when he has become accustomed to intoxication, he awakes, feverish indeed, but craving for more of his favourite drink ; his mind is torpid, and his limbs shake ; but, after his stimulant dose, he can get up, take a hearty breakfast, and set about his daily avo-

cations. The ability to take care of himself when drunk, seems to be analagous to the ability which the blind and deaf acquire, in the course of time, from exaltation of their remaining senses, by greater exercise of them. Frequent impairment of sensibility makes him, in that state, to exert to the utmost all his injured senses ; just as those who have lost a sense, exercise all their remaining ones to a greater degree. This, frequently repeated, exalts and improves them. The effect of habit, in enabling a man to withstand a great quantity of drink, is analagous to its influence in enabling a man to bear a large quantity of opium or tobacco : but we frequently hear a man very unfairly congratulate himself on the strength of his constitution, because he can take his drink ; while we never hear the smoker or opium-eater boast for a kindred reason. We believe that the man whose body resents these agents the most strongly is the healthiest man, other things being equal ; and that it is a matter of habit, not of strength.

Alcoholic drinks, when taken regularly in stimulating doses, increase the appetite for food and the digestive power ; hence a greater quantity of nutriment is taken into the body than is required for its sustenance. The consequence of this is the disease called obesity, or excessive fatness. Mr. Wadd gives the following case of this disease : “ A few

years ago, a man of about forty years of age hired himself as a labourer in one of the most considerable ale-breweries in the city. At this time he was a personable man; stout, active, and not fatter than a moderate sized man in high health should be. His chief occupation was to superintend the working of the new beer, and occasionally to sit up at night to watch the sweet wort; an employment not requiring either activity or labour: of course at these times he had an opportunity of tasting the liquor, of which it appears he always availed himself: besides this he had constant access to the new beer. Thus, leading a quiet inactive life, in a short time he became of such an unwieldy size as to be unable to move about, and was too big to pass up the brew-house staircase: if by any accident he fell down, he was unable to get up again without help. The integuments of his face hung down to his shoulders and breast; the fat was not confined to any particular part, but diffused over the whole of his body, arms, legs, &c., making his appearance such as to attract the attention of all who saw him. He left this service to go into the country, being a burthen to himself, and totally useless to his employers. About two years afterwards he called upon his old masters in a very different shape to that already described, being reduced in size nearly one-half, and weighing little more than ten stone. The account he gave of

himself was, that as soon as he had quitted the brew-house he went into Bedfordshire, where having soon spent the money he had earned, and being unable to work, he was brought into such a state of poverty as to be scarcely able to obtain the sustenance of life, often being a whole day without food ; that he drank very little, and that was generally water. By this mode of living he began to diminish in size, so as to be able to walk about with tolerable ease. He then engaged himself to a farmer, with whom he staid a considerable time, and in the latter part of his service he was able to go through very hard labour, being sometimes in the field ploughing and following various agricultural concerns for a whole day, with no other food than a small pittance of bread and cheese. This was the history he gave of the means by which this extraordinary change was brought about. He added, his health had never been so good as it then was.”—This is the direct tendency of all alcoholic drinks, but has been more remarked of malt liquors than of wine or ardent spirits. But we know that it is more easy to feed an animal that is warmly lodged and clothed, than one that is much exposed to cold. We know, for instance, that it requires more food to keep a horse in good condition, when lodged in a cold stable, than in a warm one. The same holds good in human beings.—If a man be poorly clad, and if

he spend his money in purchasing spirit instead of proper food, he becomes thin, instead of accumulating fat. This must be borne in mind, in order to understand Hogarth's pictures of "Beer Alley" and "Gin Lane;" which have been supposed by some to illustrate the directly different influence, of two different kinds of drink.

Gout is another disease which is brought on by the regular use of alcoholic drinks in stimulating doses, and by the consequent increase of too much nutriment to the body; together with the neglect of that corporeal exertion which would be required in a man, had he "to earn his bread by the sweat of his brow." It is believed to be a diseased state of the blood, and is marked by various symptoms of the class called nervous, by dyspepsia, by disordered secretions, and by attacks of illness called "fits of the gout."

In the medical treatment of obesity and gout, it is essential to abstain from those alcoholic drinks, to limit the supply of food, and above all, to exercise the body regularly, to such a degree as will ensure copious perspiration. "The sleep of the labouring man is sweet," says Solomon, "whether he eat little or much."

Diseases of the Nervous System.—The direct stimulating effect of alcoholic drinks on the brain, in some persons, is to bring on head-ache, sleepless-

ness, delirium, and convulsions. For these, we have always found tartar emetic, in large and frequent doses, an effectual remedy.

In many cases, after a fit of drunkenness, of longer or shorter duration, when the use of drink has been discontinued for some three or four days, inflammation of the brain will come on, marked by head-ache, delirium, and inflammatory fever.—We have seen many cases of this affection brought on thus, which have been ascribed to cold, or to too stimulating diet, or to some other cause. Abstinence from drink, low diet, and quietude, will generally restore the patient to health in a few days. Bleeding may be proper, if the patient be young and strong; but it must be used very cautiously and moderately. We believe that if the patient had been more moderately bled in the following case, from Cooke on Nervous Diseases, the result might have been different: p. 219. “David Torrington, on the afternoon of the 17th of June, 1818, drunk a quantity of pure rum, supposed about two pints; he shortly became insensible, and was found in that state under a hedge near the West India Docks, A surgeon passing by, bled him, and ordered him to be sent to the London Hospital. When admitted, he was in a state of total insensibility, he had stertorous breathing; frothing at the mouth; dilated pupils, which, however, contracted on holding a

candle to the eyes, and a very full and hard pulse. A drachm and a half of sulphate of zinc was given, which operated well. At eleven at night, the same symptoms continuing, he was bled again largely, his head was shaved, and a cold lotion applied to it. On the following morning he was sensible when roused, but was heavy and drowsy. In the course of the day he was well purged, bled again, and kept on a low diet, and appeared to be recovering. On the 30th he complained of pain in the region of the stomach, and on the 1st July he became furiously delirious; on the 2nd he had roving slow delirium, copious perspiration, his strength failed him, he appeared sinking, and about midnight he died. On examination, the vessels on the posterior part of the brain only were found rather turgid; the quantity of fluid in the ventricles was natural, and there was no rupture of blood-vessels. The internal coat of the stomach was inflamed in patches, as also the internal and external coat of the intestines."

Epilepsy is another disease of the nervous system, which is frequently excited by drinking. It occurs, in those predisposed to it, early in course of a debauch. But epilepsy, or convulsive attacks very similar to epilepsy, is met with at times in persons who have not previously suffered from such attacks, after a course of hard drinking of some days' duration. These attacks, or rather the bodily condition on which

they depend, are very dangerous. They are often followed by delirium, which lasts some days, and terminate in a critical sleep of long duration. This sleep sometimes comes on immediately after the attack of convulsions. The craving for drink, which precedes these attacks, generally ceases after their occurrence ; seeming to be lost or overpowered in the severe feelings of illness which follow them.

Delirium tremens.—When a person has been drinking freely for some days, and at the same time neglecting business, and bodily exertion, and when he has also been unable to take his food, a train of nervous symptoms sets in, marked by sleeplessness, trembling of the limbs, weakness, staggering gait, and restlessness ; succeeded by a feeling of fulness in the head, noises in the ears like the ringing of bells, or voices of persons, or objects which are believed to be present ; spectra before the eyes of all imaginable shapes, and making all sorts of fantastic movements ; these are generally, but not always, attended by feelings of alarm or agitation. The person may be perfectly satisfied that the objects and sounds are illusory, or he may believe that they are real, and act accordingly ; this depending on the strength or weakness of his mind, or on the degree to which his mind has been debilitated by his habits. The patient has a furred tongue, quick pulse, eyes injected and yellow, urgent thirst, and

is often in a state of profuse perspiration. An attack of this disease is often very dangerous, and the danger is in proportion to the severity of the attack, and to the age and weakness of the patient. When he is young, strong, and plethoric, it is proper to bleed him, and to give him strong doses of saline purgative medicines, preceded by calomel. Tartar emetic also acts very well in such cases. Strong doses of spirit and water, drunk hot, have also been recommended, and will sometimes produce sleep, or rather coma; but this remedy is very hazardous, as the patient may never awake out of his comatose state. Opium often acts very well in these cases, as it is a soporific to which the patient is in general less accustomed, and so a smaller dose of it than of spirit, will have the desired effect. But this also is a hazardous remedy, as in some cases (and we have seen an instance of this) the sleep will terminate in death. The result of these cases seems to depend on the strength of the patient's constitution. If he be old, weak, or worn out, he will often die, in spite of all efforts to save him; and if he be young and strong, and if the attack be the first one he has had, he will generally get well with or without medical treatment. The disease seems, indeed, from an excellent paper by Dr. Warre, (*British and Foreign Medical Review*, vol. 23, p. 603,) naturally disposed to terminate, independently of treatment,

in a critical sleep of long duration. We have tried opium in some cases, given in strong doses, and at the usual time of sleeping for two nights, without any good effect ; and the sleep has come on of itself on the third night, the patient having refused to try his draught again.—Cases of this disease occur, of the greatest possible variety, as to severity ; and though it is often a very dangerous disease or state, the descriptions of it, which are found in medical books, have generally been taken from cases which, from their severity, have required medical aid ; while, in a very great number of cases, no such aid is needed, or sought for. In slight cases, the best remedy is, to go from home, to take violent walking exercise, so as to excite profuse sweating ; to abstain altogether from strong drink, and from food also, till the appetite returns of itself.

When sleep has come on, or been induced, in this disease the patient is generally looked on as convalescent. But he always requires treatment and care afterwards, to restore the digestive organs to a healthy state, and to recruit the nervous system. The patient has for some time a weakened state of the nerves, marked by feelings of alarm on any sudden excitement, by tremors and unsteadiness of gait, and by weakness, especially when making any unwonted exertion ; by inability to command attention, and by slowness of the mental operations. These,

we believe, are caused by effusion of serum within the head and spinal canal, consequent on the obstruction to the circulation, which is always the result of keeping the brain for some time under the influence of alcoholic drinks. Speaking of this as a post-mortem appearance, Dr. Ogston says, p. 290, "the effused serum is the only morbid appearance said to be uniformly found within the head, and hence, perhaps, the general opinion, that death in cases of intoxication is caused by apoplexy, although its quantity, judging from the cases narrated, is seldom considerable, and that this effusion may take place even previous to the occurrence of coma, and without involving the necessity of an unfortunate termination, appears to me extremely probable, for the following reason:—Leaving out of view its frequently being observed in cases of slow death from various causes, I have found serum effused between the membranes and in the ventricles, in two bodies I had an opportunity of examining, where the patients had drowned themselves while in the stage of violent excitement from alcohol. In one of them four ounces of serum were collected. The intoxication in either case (for their previous histories were known,) was not so deep but that if suicide had not been committed, recovery was certain. Effusion is not set down in authors on medical jurisprudence, where accuracy is expected, as a consequence of

death by drowning ; and it will scarcely be thought, in the above instances, that it occurred during the dying struggle, or that it was a post-mortem change."

Delirium tremens, or a state similar to it, is often induced by other narcotic agents besides alcohol ;—tobacco, opium, stramonium, belladonna, tea, and coffee. All persons, also, who overtask the mind, and neglect sleep and bodily exercise, are liable to a similar state. The effect of severe and regular bodily exercise, in preventing or removing irritability of the nervous system, is strongly felt in the inaptitude for study which such exercise occasions, in those who neglect the cultivation of the mental faculties ; and we believe that the due exercise of the muscles is the *natural* and proper preventative and cure for this irritability of the nerves ; and that, in the case of alcoholic indulgence, it is what enables some persons to consume such great quantities without their having much effect in causing disease, or in shortening the duration of life. "The sleep of the labouring man is sweet, whether he eat little or much." When a man, under a state of irritability of the nervous system, finds himself unable to sleep in his bed, from the succession of ideas which crowd themselves uncalled for on his imagination, he may often put a stop to them by a resolute effort of the will, and thus secure sleep ; but this is only in

slight cases, but may and ought in all cases to be tried, by itself, or as an auxiliary.

Apoplexy and *Paralysis* are seldom the direct effect of intoxicating drinks, unless the person have been predisposed to those diseases. It is stated by the best authorities, that apoplexy is caused in more than sixty per cent. of instances, by diseases of the heart. But if a man have a chronic disease of the brain, attended with softening of its substance, or if he have ossification of the blood-vessels in the head, apoplexy or paralysis, or both, may doubtless be excited by intoxication.

Insanity.—Dr. Pritchard says, in his book on insanity, p. 204, “among physical causes of madness, one of the most frequent is the immoderate use of intoxicating liquors. There is hardly a tribe of the human race who have not succeeded in inventing some method of producing intoxication. Ardent spirits are perhaps, of all, the most injurious in their effects, particularly on the lower classes in the northern countries of Europe and America. It has been repeatedly observed, that a large proportion of the cases admitted into pauper lunatic asylums arise from this cause. They are in general to be reckoned among the cases most easily cured; for, although this is not uniformly the fact, it often happens that when the exciting cause is removed, the effect begins to lessen, and eventually ceases. When these

patients are prevented from obtaining stimulating liquors, and are treated with sedative remedies, they quickly shew signs of amelioration and of the subsidence of disease."

We believe that no man can have a more difficult task imposed upon him, than to say what insanity is.—Yet, we believe, that the descriptions of it given by medical writers are sufficient for practical purposes. We also believe, that when a man is insane to a degree which calls for the interference of the medical man, or of the civil authorities of the country, his state can always be discovered and known by any sane man, independently of special education.

The difficulty of the definition is encountered at the very outset of the attempt; for two men can hardly be found to agree as to what sanity is. *Soundness* of the intellectual faculties, of the moral principles, and of the affections, is merely another form of expression for the condition. What constitutes this soundness? We hold that it will, or ought to be, admitted, that no man has, or can have this by nature; hence the need of a revelation to man. This revelation has been given to man, authoritatively,—the authority of the Giver having been duly attested. Whoever admits this, will say, that no man can be sound in mind who rejects this revelation, or who falls short of conformity to it in every particular.

It has reference to the present state and future destiny of man. If, therefore, reception of, and submission to, this revelation be essential to perfect soundness of mind, as few men do receive and submit to it ; it follows that few men are, in this sense of the term, sane. A man may, however, reject this standard of sanity, and say, that a man is sane who holds the opinion, and acts accordingly, that the good of himself and of his fellow-creatures is the chief object of life. Such a man will say, that whoever does not make this his object, and act accordingly, is not strictly sane.

Insanity, however, as it is understood by the jurist and medical man, has a much more limited signification than either of these. But we take it that a man must admit that any falling short of one or other of these standards of sanity, constitutes a degree of unsoundness, before he can enter on a consideration of the effects of intoxicating drinks on the mind—the intellectual and moral part of man.

If loss or derangement of the intellect, or if loss of the power of self-control, or of any other moral faculty, constitutes insanity ; then, certainly a man is insane when drunk, seeing that when so he neither knows nor cares what he does or whither he goes. He cannot take care of himself, or of his property ; and has to be seen safe home, or to the lockups. There is no peculiarity in his case, save

that it is *voluntarily brought on*, and *lasts but for a short time*. Jurists, however, hold him to be responsible when drunk, because his insanity is voluntary.

If any one wishes to know the mental and moral evils of drunkenness, let him go, in a sober state, to a company of drunkards, and see for himself; or let him read the police reports, or the reports of criminal trials at assize courts. Sir Matthew Hale said, "the places in the judicature which I have long held in this kingdom, have given me an opportunity to *observe* the original cause of the crimes and enormities during the last twenty years; and by that observation I have found, that if the murders, robberies, riots, adulteries, and other enormities, were divided into five parts, four of them have been the product of excessive drinking." Other judges have made statements to the same effect, and, in fact, are continually making them at every assizes. No wise man will drink during the transaction of any business, neither will he drink in the company of any one whose interest it may be to draw any secret out of him. No man, addicted to gambling, will do it when in his cups, if he wish to save his money. Dr. Truman says, in his book on Food, p. 171, "The professed gamester dines on boiled fowl and lemonade, to keep his head clear, without which he knows he has no chance of winning

by play in the evening." This is sufficiently significant.

But a man may have become accustomed to drink, and may have acquired so strong a craving for it, that all the ordinary pleasures and obligations of duty are insufficient to induce him to resist it; and yet he may go on in the regular indulgence of his propensity, without often getting drunk, until poverty or disease puts a stop to his course. Whenever this propensity has taken hold of a man to such a degree, that considerations of character, business, home, possessions, and friends, have no influence in restraining him;—if that man will not entirely abstain, (for *nothing short of this can cure him*,) he ought at once to be committed to an asylum for insane persons.

Man is so constituted that every good resolve, and every effort at reformation, if carried out, will strengthen his moral powers and mental faculties; but, if broken, will weaken them. Of the former, we have a very interesting and instructive example in a work published to show the power and efficiency of self-control, both in sane and insane persons. Barlow, on Man's power over himself to prevent or control Insanity, p. 37,—“In one instance, the father was a blacksmith, and the imbecile son had been taught to strike with the great hammer, which he did perseveringly when told to do so, and thus

earned a subsistence, though his limbs had the usual shambling movement of idiots, and though he was scarcely able to express his meaning by words. On one occasion he accidentally killed a neighbour's goose, by throwing a stone;—he was inconsolable, and could only be pacified by the fullest restitution to the owner. In this case, the intellectual force had been wisely employed to counteract the natural defect, *for the man became more and more capable as years passed on*; and, finally, having earned enough to supply his frugal subsistence, and allow of saving besides, he spent the last years of his life in repose,—a respected member of society,—for though his mental deficiency was known, he was honoured for the worthy use he made of the little capacity he possessed." In painful contrast with this case, and in illustration of the total loss of self-control which follows repeated lapses, we quote the following one from Dr. Pritchard's work on Insanity in relation to Jurisprudence (p. 50.) "A gentleman of good connections, of good education, and of mental capabilities far above the general average, was brought up under the most advantageous circumstances that wealth can command, to the surgical branch of our profession. He was fond of literary pursuits, and had rendered himself an ornamental member of society by a careful and critical course of general reading. In his disposition he was mild, kind-

hearted, obliging, and generous ; and his attachments and affections were strong and ardent. Educated as a gentleman, he possessed what is essential to the character—the highest moral and religious principles, without enthusiasm and without fanaticism, and the strictest regard for that correct conduct which is due to those of his own rank in society. An unfortunate excess, to which he was seduced when his studies in London were completed, laid the foundation for a total subversion of his character. He became irregular in his habits, negligent of his person, careless of the society he fell into, addicted to drinking, suspicious of his friends, wantonly extravagant, perverse in disposition, irritable and overbearing. Indulging himself in idleness for several years, and in dissipation when he had the means, he reduced himself to the condition in which he became known to me. My first acquaintance with him was under the effect of a long debauch, and the history of that will contain the recent history of the man.—Being still fond of reading, he prosecutes his study quietly, but ardently, for some weeks together, towards the end of which time indications of excitement show themselves. He becomes more inclined to talk, and less disposed to read. In his conversation he assumes a loud and dictatorial tone, is impatient of interruption, intolerant of contradiction, and bears with ill-grace

the modest expression of an opinion different from his own. He becomes abrupt in his manners, speaks coarsely of mankind generally, and ill of his friends and relations. Of those most nearly connected with him, he speaks disrespectfully, and holds them up to ridicule upon all occasions, introducing their names when totally uncalled for, merely to gratify this perverted feeling. A greater degree of impatience is sometimes felt with some bodily sensation which leads him to use ardent spirits for its relief or removal. Excepting at such times, this gentleman's habits are most abstemious : he never drinks any thing stronger than beer, and frequently tastes water only for weeks together. When, however, this thirst for ardent spirits comes on, a fondness for low society accompanies it. On these occasions he repairs to a pot-house, takes his mixture amidst the lowest of mankind, and treats all the bricklayers and hod-carriers who will drink with him ; tells them tales, and recites to them for days and nights together, if they will listen to him, and ceases only when the reluctant integrity of mine host will draw no more for him ; or, which is more commonly the case, when his cash is exhausted, and his credit of no avail. During these lamentable debauches, he seldom gets drunk, although drinking and smoking incessantly ; he falls into a state of abstraction for a time, and dozes and sleeps until the uneasy sensations within his

stomach rouse him, and impel him to call for more drink. His condition, when no more drink is allowed him, is distressing ; he intreats and orders, implores and commands, grows violently enraged, experiences an hysterical or epileptic convulsion, sinks into a chair or on the ground, and falls into a sound sleep. This continues for twenty or thirty hours, when he awakes to the horrors of his situation, and to the mortification arising from his folly. No longer is to be found the high tone, the overbearing demeanour, or the authoritative language : he is the humblest of the meek, and continues depressed for several weeks. Then he enjoys a period of tranquillity, to be succeeded by the overbearing conduct before mentioned, and to be finished within the period of three months, by another visit to the society of tinkers and labourers.—In this state of depression I first saw him, free from every kind of delusion, and regarding the world as having no spot within it which was not too good for so mean a being as himself. He was desirous of redeeming his past follies by a life of usefulness and activity ; and was regardless of the kind of occupation to which he might be subject, provided he were only made useful and industrious. To sweep the shop, and open the shutters of a huckster or tallow-chandler, would have been regarded by him as a valuable appointment, by way of beginning. When, however,

employment of the simplest kind was proposed to him, he found himself wanting in resolution to engage in it. He could busy himself about nothing, he would change from one trifling engagement to another, but would not steadily employ himself. In about three weeks the depression had left him, and he was enabled, for some time, to enjoy the rational amusement of reading, in which he greatly delighted, particularly works of history, and philosophy, memoirs, &c. For about six weeks he spent his time usefully and rationally in this occupation, when he began to think himself entitled to his liberty; he requested permission to take some exercise, which was permitted him without superintendence; he grew louder and higher in his tone of conversation; began to hold himself above his fellow-patients, and ceased not to quarrel and disagree with them; his manners, formerly agreeable, were now much changed, but not so far as to allow us to remark such alteration to him, without encountering the chance of failing to produce conviction.—At the expiration of three months from the time when I received him, he was discharged, having no disordered ideas, and having conducted himself like a sane man. In five days I was requested to take charge of him again, and I found him in a village pot-house, in the midst of company, low and disgusting; without money, almost without clothes,

which he had sold to purchase liquor to share with his contemptible companions. I removed him to confinement, in which three other months were spent, much as those already described ; and within ten days from his second release, he repeated the same indiscretions, and was replaced in an asylum."

CHAPTER V.

Diseased Heart and Aneurism.—Diseases of the lungs.—Asthma.—Bronchitis.—Pneumonia.—Consumption.—Diseased liver.—Cirrhosis.—Fatty liver.

Diseased heart and aneurism.—Drunkards are peculiarly liable to diseases of the heart and arteries. They originate in inflammation, acute or chronic, of the lining membrane of the left-side of the heart, and of the arteries.

If the inflammation be acute, it gives rise to a very high degree of fever, (the blood being more inflammatory than in any other disease,) to sounds on auscultation, to palpitation, to dyspnœa, and to dropsy. If the case terminate in death, the inner coat of the vessels is found, on post-mortem inspection, red and covered with patches of gelatinous deposit.

If the inflammation be chronic, it does not produce such well-marked symptoms, but proceeds insidiously, and the deposit of lymph and jelly on the inner coat becomes organised; and if it occupy the valves at the entrance and outlet of the heart, it becomes contracted, and causes the valves to remain permanently open, and so unfit for their office. Also, both in the cavities of the heart and vessels, the animal portion of the deposits is absorbed, leaving

an earthy matter behind. This is called ossification of the heart and arteries. The arteries are very elastic in their healthy state ; but, when ossified, they lose this elasticity. The consequence of this loss of elasticity, is a liability in their coats to rupture ; and this again gives origin to the disease called aneurism. These ruptures often occur near joints which have extensive motion ; and aneurisms are often met with in the groin, ham, and armpit. The connection of these diseases with the use of alcoholic liquors, was remarkably shewn in Ireland, when they became much less frequent in consequence of the beneficial efforts of Mr. Mathew, in the way of temperance. But, besides the aneurisms which occur near to joints, and from partial rupture of the vessels, there is a kind of the disease which consists of dilatation of the whole diameter of vessels, in consequence of loss of their elasticity, and consequent incompetency to withstand the distending force of the blood sent into them by the heart's action. These generally occur near to the heart. They occasion various distressing symptoms, by impediment to the circulation of the blood, and by the pressure of the tumours they form on the important and vital parts contiguous to them. They sometimes cause death by rupture, and consequent loss of blood ; more commonly they wear the patient out, by the sufferings to which they give rise.

When the valves at the junction of the heart and arteries become unfit for their office, either by contraction or by ossification, or by the distension of the artery in case of aneurism; the heart itself becomes enlarged in consequence of the increased demand on its energies. The office of the valves being to prevent the reflux of the blood, which the contraction of the heart has just sent beyond them,—when they become spoiled by disease, of course the reflux takes place, and the heart has to do its work over again. Hence, enlargement of the heart, with palpitation and all its other symptoms: hence, also, from this regress of the blood, an impediment to the ingress of fresh blood from the lungs. If, also, together with this, the mitral valves, situate between the auricle and ventricle, on the left side of the heart, be spoiled by contraction or ossification, the impediment is made worse, by the repulse of the blood to the lungs, during the contraction of the ventricle. Thus, congestion of the lungs takes place, and gives rise to difficulty of breathing, asthma, spitting of blood, pulmonary apoplexy, dropsy of the chest, and general dropsy.

The right side of the heart and the pulmonary arteries are much less liable to inflammation than the left side, and the arteries that carry arterial blood: but the right side is liable to enlargement as well as the left, from the frequent sources of

impediment to the passage of the blood through the lungs, from disease of those organs, or from coma, which cause the impediment.

Diseases of the lungs are often caused or aggravated by a habit of taking alcoholic drinks. Pulmonary emphysema or asthma, by which the surface of the air cells is lessened in extent, impedes the oxygenization of the blood, and thus impedes its flow through the lungs, just as it is retarded by deficiency of air ; and thus enlargement of the right side of the heart is originated.

Bronchitis and pneumonia, also, impede the oxygenization of the blood. The former, by covering the air passages with mucus ; the latter, by solidifying portions of the lungs, and rendering them impervious to air. These, therefore, also tend to cause enlargement of the right side of the heart. Sir James Clarke, in his book on Consumption, p. 77, says, "There is a form of cough which properly belongs to the stomach, as it originates in, and is kept up by, a deranged state of that organ. This cough occurs late in life. It is accompanied by a considerable expectoration of tenacious mucus, which, from its occurring chiefly in the morning, has received the name of the morning phlegm. It is generally the consequence of too free living, and accompanies the last ten or fifteen years of the gourmand's life." It is customary for patients who have

this cough, or other kinds of chronic cough, to take, in the morning, a dram of raw spirit, to promote expectoration ; and they derive temporary benefit from the practice, it seeming to act as a stimulant. But many also take stimulating drinks at night, for the same purpose ; but as, during sleep, their effect must be to act as narcotics, and in that way to impede the transit of blood through the lungs ; they must, when taken then, aggravate the mischief, by increasing the quantity of mucus secreted.

Phthisis.—Consumption is a disease which is frequently hereditary, and which also often occurs in the children of drunkards, and of others who have suffered from gouty or stomachic affections, but which may be brought on in any person, however healthy, by imprudences as to diet, and especially by excess in the use of inebriating drinks. There is a close sympathy between the stomach and lungs, and bronchitis is a common symptom of some affections of the stomach. This bronchitis, by its continuance, gives origin to tubercular deposit in the course of time, whether the person be predisposed to it or not ; this we believe is the way in which the abuse of these intoxicating drinks brings on phthisis.

Diseased liver.—Chronic diseases of the liver, such as are usually induced by a course of intoxication, are very obscure, and difficult to be made out during the life of the patient. The function of the

liver is to secrete bile from the blood. This bile contains ingredients which would be noxious if retained in the blood, and therefore its discharge is excrementitious. But the bile is made subservient to the digestion of food, and is also a necessary stimulant to the intestinal canal. The secretion in the liver, and excretion into the intestinal canal, are believed to be excited by the presence of food in that canal ; just as the secretion of saliva is excited by the presence of food in the mouth. - It is also believed that, by reason of this consent between the stomach and liver, when the stomach and bowels are irritated by noxious contents, such as spirituous drinks or improper food, the liver is excited also ; and that diseases of the liver are brought on in drunkards in this way.

We think, however, that the narcotic action of alcoholic drink, is a much more common and powerful cause of disease of the liver than irritation of the stomach ; from the enlargement of that organ to which it gives rise, by obstructing the flow of blood through the lungs. We know that when an animal dies by asphyxia, in perfect health, the liver is found much enlarged after death, in consequence of distension by blood. The liver is apt to be diseased in all diseases which render the breathing difficult. For example, in spasmodic asthma, it has been felt to enlarge, during a fit of that disease, through the

walls of the abdomen ; and again, this enlargement has been found to disappear with the paroxysm. But, after repeated fits of asthma, and repeated distensions of the liver, that *viscus* becomes permanently enlarged. The distension excites inflammation of the part, and that inflammation is attended with effusion of lymph in the organ, this lymph becomes organized, and then it contracts, and thus compresses the vessels and bile-ducts of the organ. The bile-ducts being compressed, the bile is retained in the liver, and the ducts further distended ; hence the yellow enlargement of the liver, called *Cirrhosis*. But the bile being retained in the liver by compression of the ducts, the organ becomes more or less incompetent for its functions ; and, when the function ceases, the part wastes. Thus it is explained how, in cirrhosis, the organ is first enlarged, and then becomes wasted. To such an extent has this primary enlargement and subsequent wasting of the organ gone, that bands of adhesion which the liver had formed, when inflamed and in contact with other parts, when enlarged, have been found to be stretched to the extent of four inches, when the organ has subsequently receded to a smaller size. The jaundice, which accompanies this diseased state of the liver, is easily understood. The dropsy of the belly, which Dr. Hope says *always* accompanies disease of the liver, when that *viscus* has been much

reduced in size, is also very explicable. The same may also be said of the diarrhœa, vomiting of blood, hæmorrhoids, and other affections, which are often caused by disease of the liver. Now, it surely needs no remarks to show, that a more or less continued state of coma, from the taking of alcoholic drinks, and a consequent more or less continued state of congestion of the liver from impeded respiration, must always have the same effect as congestion of that organ from disease.

Fatty Liver.—Coma is induced by many other impurities in the blood, besides alcohol. The suppressed secretion of bile, of urine, or of the menstrual discharge in women, acts thus. Various noxious gases, and even oxygen itself, the same. The contagious matter of typhus fever, also. Even mere plethora or fulness of blood, the same. The presence of fresh nutriment in the blood, before perfect assimilation, seems also to act in the same way. Dr. Prout found that the quantity of carbonic acid eliminated at the lungs, was less immediately after eating. Many of the lower animals, and even some men, feel very drowsy after a meal. Persons predisposed to apoplexy are often seized with that disease after a full meal; and this, we think, has been erroneously ascribed to mere mechanical distension of the stomach. The stall-fed ox, the pig, and lazy indolent men who sleep and eat much, are

liable to depositions of fat (which have always been looked upon as disease) in various textures of the body. Every one knows how much greater an effort is required for study, when the brain is oppressed by plethora, or after a full meal. And all dyspeptics know the cold extremities, the flushing of face, and the total inaptitude for mental effort, which are present during a fit of their complaint. Now, we can easily understand that in the disorganized state of the lungs, which constitutes phthisis, the arterialization of the blood must be impeded; and how, therefore, the liver must be congested. Proof of this is seen in the diarrhœa, and disease of the bowels, which attend that disease; and in the state of the liver, found after death from it. Sir James Clarke, p. 161, says, “the liver in phthisis presents one remarkable alteration of structure, which consists in its equable transformation into a fatty substance. This change appears to take place simultaneously over the whole organ, and to be intimately connected with the development of tubercles in other organs; for of forty-nine cases of this degeneration observed by Louis, forty-seven were phthisical; and of two hundred and thirty subjects who died from other diseases, it occurred in nine only, seven of whom had a few tubercles in the lungs. When far advanced, it soiled the scalpel and hands like common fat:—when the change existed

in a less degree, its presence was detected by the impregnation of paper with fat, on a portion of the organ being enclosed in it and exposed to heat. This degeneration of the liver is marked by a pale fawn colour, diminished consistence, and increased bulk of the organ, which sometimes enlarges to double its usual size. The rapidity with which it takes place seems to depend almost entirely on the progress of consumption; for it has been found when this has run through all its stages in fifty days. Its occurrence is independent of the patient's age or strength of constitution; sex, however, appears to have a decided influence, as of the forty-nine cases observed by Louis, only ten were males.—The causes which conduce to this morbid change are very obscure: affections of the duodenum, which Broussais supposed to cause it, have been found by Louis to have no influence in its production. It is yet more remarkable that it is accompanied by no appreciable symptom except increase of bulk, and that the functions of the organ appear to go on undisturbed.”—Now, this is a very remarkable example of fatty deposit going on in an organ of the body, whilst all the rest is wasting away,—this organ being, as it is well known, more liable to congestion than any other. The liver, in these cases, seems to act like a dam in a river, which collects the gravel washed from the district above

it. It is remarkably consistent with this view of the cause of fatty liver, that it is met with more frequently in the bodies of females than in those of males ; for it is well known that the former have proportionably more fat in their bodies than the latter.

This fatty disease of the liver is produced designedly in fowls, in some parts of the Continent ; the organ in this state being deemed a choice bit by epicures. It was formerly done by mixing ardent spirit with the food ; but now, it appears, they trust to over-feeding and confinement of the body.—Dr. Truman on Food, p. 147, says, “ Geese when over-fed, and deprived of exercise, become affected by a sort of hepatic cachexy, which is the way the ‘foie-gras,’ so much esteemed in France, is obtained. A lean goose is selected and confined in a deal-box, which is so small that the bird cannot turn in it: the bottom is provided with a wide grating of rods for the passage of the dung. A hole is made in the fore part of this box for the head of the bird, under which a vessel is placed full of water, with some pieces of charcoal in it, to keep it fresh. The bird is placed in this state in a cellar, or other dark place, no doubt to prevent all distraction, and concentrate all the powers of the constitution on the digestive organs : it is even said the creature’s eyes are sometimes put out, to render it more

inactive. The food employed is maize soaked in water, considerable quantities of which are crammed down the bird's throat morning and evening, and the rest of the day it remains constantly drinking and guggling the water placed before it. About the twenty-second day some poppy oil is mixed with the maize, and by the end of the month the fattening process is usually completed. This is indicated by the difficulty the bird has in breathing, and by the presence of a lump of fat under each wing. It is now necessary to kill it, or otherwise it would die of fat.—Some idea may be formed of the state of obesity produced, when it is stated that the liver of a goose, treated in this manner, often weighs from one to two pounds; and that the body, which is considered excellent eating, furnishes while roasting from three to five pounds of fat."

CHAPTER VI.

Inflammation of the stomach and bowels.—Inflammatory dyspepsia.—Dr. Beaumont's experiments.—Remark of Dr. James Gregory.—Treatment.—Fallacious effects of stimulants.—Dr. Trotter's experience.—Vomiting of blood.—Urinary diseases.

Gastritis.—Inflammatory affections of the stomach and bowels are frequently the effect of using spirituous drinks. Dr. Christison says, p. 849, “after the ordinary narcotic effect of alcohol passes off, another set of symptoms occasionally appear, which indicate inflammation of the alimentary canal. Cases of this kind are exceedingly rare; yet they have been met with as the following extract shews:—
‘A young man at Paris had been drinking brandy immoderately for several successive days, when at length he was attacked with shivering, nausea, feverishness, pain in the stomach, vomiting of every thing he swallowed except cold water, thirst, and at last hiccup, delirium, jaundice, and convulsions; and death took place on the ninth day. On examining the body the stomach was found gangrenous over the whole villous coat; the colon too was much inflamed; and all the small intestines were red.’”
Dr. Ogston says, p. 292, alcohol “seems to act as a local stimulus to the stomach, giving rise to irri-

tation of its nervous coat, which in confirmed drunkards tends to further changes. Thus, in such instances, dissection discovers the mucous coat thickened and softened, and this softening is not confined to the stomach, but is met with occasionally in the smaller intestines throughout their whole extent. I lately found in a person of this character the whole of the coats of the stomach firm and thickened, to at least three times their usual size. The smaller intestines are often found injected, and ulcerations are observed in the lower portion of the ileum."

Dr. Todd has described, exceedingly well, the form of indigestion which is met with in drunkards, under the name of inflammatory gastric dyspepsia; *Cyclopedia of Practical Medicine*, vol. 3, p. 624; and as it is the most common of all the physical evils brought on by drink, we shall quote his description of it at length.

"*General character.*—Painful digestion, sense of heat, tenderness, or pain at the epigastrium, increased upon taking food, or on pressure; thirst; tongue more or less of a bright red colour, sometimes brownish red, sometimes dry, glossy, and adhesive; taste saltish or alkaline, occasionally like that of blood; bowels generally confined; urine high-coloured; skin dry, occasionally profuse, partial sweats, chiefly in the direction of the extensor

muscles ; temperature of the trunk increased, of the extremities diminished, except occasionally in the palms of the hands and soles of the feet, which, especially at night, are frequently dry, hot, and burning ; aggravation of the symptoms under the use of stimulants or irritating ingesta.

“ *Forms of the disease.*—As this disease may present itself in different degrees of intensity, the symptoms are liable to a corresponding variation.

“ In its lowest degree it is not manifested by loss of appetite, but by increase of thirst, particularly during the night, by increased heat of the skin, flushing of the face, and redness of the conjunctiva, particularly after meals, by disturbed sleep, unpleasant dreams, and by the patient awaking wearied and unrefreshed. The tongue, on its anterior half, is of a red colour, brighter than natural, often by superficial observers mistaken for a clean tongue ; it is seldom dry except during sleep, but soon dries on exposure, and is generally found in this state on awaking ; sometimes there is an increased flow of saliva, particularly during sleep, sufficient to leave large stains upon the pillow. When the stomach is loaded with crudities, the tongue is covered with a brownish yellow fur towards its base. The lips are generally dry, and of a glossy red colour, the fauces dry, flushed, or erythematous. The bowels are confined, only dry scanty stools being voided ; the urine

is scanty, but clear and high-coloured ; if any sediment be deposited, it is small in quantity, forming a thin lateritious coating on the bottom of the vessel. The pulse is somewhat harder, more contracted, but seldom much accelerated except during digestion. Cotemporaneous with these may exist various secondary symptoms, such as a painful sensation of tension in the head, increased on motion and after eating, or a painful pulsating tension, sometimes a sense of fulness ; pain between the scapulæ, pain of the left side, left shoulder, or left arm, and sometimes local pains in various parts of the body, often felt most acutely on awaking ; eruptions of the skin, chiefly *lichen*, *erythema*, *urticaria*, *psoriasis*, and *pityriasis*.

“ In a more advanced stage of the complaint the patient begins to refer his sufferings to the seat of his disorder. He complains of a burning pain at the pit of the stomach, which is much increased upon pressure, and after taking food ; or of a sensation of oppression at the stomach, with great uneasiness and discomfort during the digestion of his food, which is generally also accompanied with flushing of the face, acceleration of the pulse, and frequently a tense pulsating headach. If the appetite is not impaired, it is sooner satisfied, and taking food sometimes causes nausea. There is considerable thirst ; the face is red and swollen, the eyes

are red, the lips red and parched, sometimes blistered and swollen ; the tongue is either of a bright glossy red, sometimes smooth, having the papillæ obliterated, disposed to be dry and adhesive when touched, or of a brownish red colour, or presenting a red ground covered with a thin film of the colour of coffee ; small vesications or ulcerations are common upon the tongue, upon the inside of the lips and cheeks, and the mouth generally, which is also redder than natural. The fauces are also red, presenting an erythematous blush ; they are generally dry, and frequently the seat of ulcerations. The taste is saltish or alkaline, frequently corresponding precisely to that produced by nitrate of potass ; there is also very often a sensation of heat or of scalding at the point of the tongue, such as follows the taking very hot soup. The bowels are constipated, the urine is scanty and of a high colour ; the skin dry and harsh, except during sleep, when the patient is sometimes bathed in a heavy transient sweat : the pulse is now permanently quicker than natural, small and contracted, but always quicker and stronger during the process of digestion ; the temperature of the body is increased, and the patient complains of burning of the palms of the hands and soles of the feet at night, the sleep is disturbed by painful or unpleasant dreams.

“ The preceding symptoms, the constant signs of

the disease, may be obscured or thrown into the shade by some of the more prominent secondary affections, often the chief subject of the patient's suffering and complaint, and of the physician's attention. The principal of these are headach—a tense splitting headach, increased by motion, by stooping or eating, sometimes deep pains plunging through the head; these are accompanied with a morbidly increased sensibility to light, sound, and all impressions; pain in the left side, in the left hypochondrium extending to the shoulder and arm, pain of the back between the scapulæ, particularly severe on awaking; strong and painful pulsation of the heart, increased in impulse, bearing all the appearance of hypertrophy of the ventricles; inflammation of the eyes or eyelids; soreness, redness, and ulceration of the membrane of the nose; eruptions of the skin, chiefly scaly and exanthematous; suppression of the menstrual function for a time, not unfrequently followed by increased menstruation. With these are conjoined more or less peevishness of temper, irritability of feeling, sullen oppression of spirits, anxiety or restlessness of disposition, all strongly though not elegantly expressed in the words of Cælius Aurelianus: *animi angustia, jactatio, anxietas, sive concatenatio mentis et desponsio*.

“In a more acute degree of the complaint there is a total loss of appetite, or disgust for food, which,

on being swallowed, causes nausea, or is instantly vomited. There is an indistinct dull pain across the pit of the stomach, or a sensation of constriction as if something were tied tightly across it. The pain is increased on pressure, and sometimes a strong palpitation is felt at the same time. Frequently the pain is felt more in the chest, or the patient complains more of darting pains under the breast, which, being accompanied by a hard dry cough, bears all the appearance of, and is not unfrequently mistaken for, a pulmonary affection, but which may be easily distinguished from it by the cough being always excited by stimulating ingesta, by its returning in paroxysms, by the accompanying state of the tongue, and by the general complexion of the disease. The features are drawn and dejected, the face flushed, and the forehead moist and clammy; the lips are red, the conjunctiva injected, and the eyes prominent. There is considerable thirst; the tongue is dry and parched, sometimes hard and scabrous; it is generally of a brick-red colour, or it is covered with a thin brownish mucous crust; sometimes it presents the appearance of raw flesh, and has been not inaptly compared to a beefsteak or cleanly dissected muscle. If crudities be present in the stomach, which is, however, seldom the case, or if a saburral be added to an inflammatory state of the mucous membranes, the root of the tongue is loaded

with a yellowish white fur, whilst its point and edges are of a bright red colour, or the papillæ are prominent, projecting through the fur ; the breath is fetid and the taste bitter. In this state only are there ever acid, nidorous, or fetid eructations. The throat is sore, the fauces are erythematous, and, together with the inside of the mouth, frequently become aphthous. Sometimes the tongue is of a dark red colour, resembling the lees of wine, occasionally as dark as logwood. This colour indicates the co-existence of congestion and plethora of the abdominal circulation. The bowels are constipated, but to this state diarrhœa is apt to succeed as the disease continues. The urine is high-coloured ; the skin dry, harsh, and flaccid, except during sleep, or while digestion is in progress, when there are frequently heavy, partial, unsatisfactory sweats. The pulse is quick, hard, and small. In the evening, and during sleep, there is generally an exacerbation of all the symptoms, marked by agitation and restlessness.

“ There is also a more chronic form of this complaint, which either arises more gradually, or into which the states we have just been describing may have subsided. It is marked by great uncertainty of appetite, sometimes impaired, sometimes morbidly increased ; a sensation of heat at the pit of the stomach, sometimes likened to the feeling of a burning coal placed there, or there is a distressing

sensation of craving, sinking, or indescribable anxiety. The patient is generally much tormented with flatulence and the symptoms to which it gives rise, a sensation of choking, anxiety, restlessness, and hiccup ; and he sometimes suffers much from pulsation at the præcordia, from spasmodic pains in the epigastric and left hypochondriac regions ; or there may be a violent pain at the epigastrium, extending through the left hypochondrium and left shoulder ; frequently there is a sense of heat internally when the surface is cold, not inaptly termed by the common people an *inward fever*. All the symptoms are much increased by taking food, even the mildest, so much so that patients are afraid of taking food on account of the uneasiness produced by it, from a feeling as if the stomach were incapable of holding anything beyond the smallest quantity. When the stomach is empty, some patients are entirely free from complaint. The bowels are costive, the urine scanty and high-coloured ; the tongue is moist and clean, but redder than natural, generally broken by sulci, and studded with large developed papillæ ; sometimes it is covered with a thin, milky, white fur, through which the papillæ project ; the gums are often red, swollen, and spongy, and there is often a taste of salt, of alkali, or of blood in the mouth ; sometimes the tongue presents a dry and glazed appearance, with insatiable thirst,

and a dry parched state of the mouth ; sometimes there is a raw and tender state of the mouth and throat, with uneasiness in swallowing ; or there is a sense of burning in the mouth and throat, with hysterical constriction, pain and soreness in the course of the œsophagus. The pulse is small and feeble, and quicker than natural ; the skin is dry, rough, shrivelled, flaccid, and sometimes at length almost scaly ; the nails become dry and brittle, and often curved ; the hair is parched, and inclined to stand on end, and the whole surface is cold. The patient is constantly hanging over the fire, and frequently experiences fits of chilliness, approaching to shivering. The feet and hands are either preternaturally hot or cold ; there is coldness or a cold torpor of the extremities, with a general sensation of chilliness ; extreme morbid sensibility of any change of temperature, so that when the patient gets warm in bed he soon becomes hot and oppressed, the soles of his feet and palms of his hands burn, and he tosses about restless until he breaks out into a strong and heavy sweat. His sleep is interrupted and unrefreshing, and he awakes hot, thirsty, and weary, in a state of confusion of mind.

“The ordinary accompaniments of this chronic affection of the mucous membrane of the stomach are great languor and depression, sometimes insupportable, the patient sinking into a state of extreme

debility on the least exertion. The body is wan and emaciated, frequently sallow, the temper fretful, anxious, impatient, or dejected; sometimes there is a troublesome cough, dry, or with scanty mucous sputa; or there is dyspnœa, and pain of the chest like pleurisy; and in either case the symptomatic febrile affection approaches so near to hectic, that it is not rarely mistaken for consumption. Sometimes there is palpitation and other irregular actions of the heart; sometimes headach, a tense binding pain across the head, vertigo, or tinnitus aurium; sometimes neuralgic pains of the limbs, sometimes osteocopic or painful affections of the periosteum; and frequently some affection of the skin, chiefly *erysipelas*, *erythema*, *lichen*, *urticaria*, *pityriasis*, *psoriasis*, *alopæcia areata*, the head becoming bald in round patches. But whatever be the most prominent secondary affections, the chief subject of the patient's complaint, there is a characteristic colouring common to every one of them,—they entirely engross his thoughts and occupy his attention, unless, which is not rarely the case, his bodily suffering be transformed into, and represented by, some mental hallucination. The patient's mind never turns from his sufferings, or if it does for an instant, it is only to revert to them with increased earnestness; and as the external senses, constantly exercised, acquire a fine and acute delicacy of sensation,

so that they can take cognizance of minute and subtile objects which escape the ordinary sense, so the internal sense, painfully exercised in suffering which occupies his exclusive attention, acquires a keen microscopic power, and a fineness and subtilty of perception, which, surpassing common experience, is classed as partly nervous, partly imaginary, under the term of *hypochondriasis*,—a disease which M. Broussais satisfies himself with explaining as consisting in an excess of gastric susceptibility.”

Dr. Todd states, “certain habits of life have the chief influence in inducing this complaint, such as living on dry, heating, and high-seasoned food, the habitual use of ardent spirits, of liquors, of punch, and of opium; hence it is the dyspepsia of the dram-drinker and opium-eater, and belongs altogether more to the drunkard than to the glutton.”

Dr. Beaumont, of America, published *Experiments and Observations on the Gastric Juice and the Physiology of Digestion*; which he had enjoyed the opportunity of making in a man who had an opening into the stomach.

July 28th, 1833.—He says, “stomach not healthy; some erythema, and aphthous patches on the mucous surface. St. Martin has been drinking ardent spirits, pretty freely, for eight or ten days past—complains of no pain, nor shows symptoms of any

general indisposition—says he feels well, and has a good appetite.

August 1st.—“ Inner membrane of the stomach morbid ; considerable erythema, and some aphthous patches on the exposed surface ; secretions vitiated.

August 3rd.—“ Inner membrane of stomach unusually morbid ; the erythematous appearance more extensive, and spots more livid than usual, from the surface of some of which exuded small drops of grumous blood ; the aphthous patches larger and more numerous, the mucous covering thicker than common, and the secretions much more vitiated. The gastric fluids extracted this morning, were mixed with a large proportion of thick, ropy mucus, and considerable muco-purulent matter, slightly tinged with blood, resembling the discharge from the bowels in some cases of chronic dysentery. Notwithstanding this diseased appearance of the stomach, no very essential aberration of its functions was manifested. St. Martin complains of no symptoms indicating any general derangement of the system, except an uneasy sensation, and a tenderness at the pit of the stomach, and some vertigo, with dimness and yellowness of vision on stooping down and rising again ; has a thin yellowish brown coat on his tongue, and his countenance is rather

sallow ; pulse uniform and regular ; appetite good ; rests quietly, and sleeps as well as usual.

August 6th.—“ The inner surface of the stomach had recovered its healthy appearance. He had been restricted from full, and confined to low diet, and simple diluent drinks, for the last few days, and has not been allowed to taste of any stimulating liquors, or to indulge in excesses of any kind.”

Dr. Beaumont remarks that “ diseased appearances, similar to those mentioned above, have frequently presented themselves in the course of my experiments and examinations. They have generally, but not always, succeeded to some appreciable cause. Improper indulgence in eating and drinking has been the most common precursor of these diseased conditions of the coats of the stomach. The free use of ardent spirits, wine, beer, or any intoxicating liquor, when continued for some days, has invariably produced these morbid changes.”

He adds, “ these morbid changes and conditions are, however, seldom indicated by any ordinary symptoms, or particular sensations described or complained of, unless when in considerable excess, or when there have been corresponding symptoms of a general affection of the system. They could not, in fact, in most cases, have been anticipated from any external symptoms, and their existence

was *only ascertained by actual ocular demonstration.*"

Dr. Combe says of this,—“ St. Martin affords a remarkable example of palpable disease being invariably produced in the stomach by drinking freely of spirits, beer, or wine, or intemperate eating ; and yet such disease being, for a considerable time, attended by no general symptom sufficiently distressing to arrest his attention. He, therefore, might with equal truth have argued, that such indulgences did him no harm, because he *felt* none ; and yet, if his inflamed stomach, so different in its appearance from its healthy state, had been presented before his eyes reflected in a mirror, there would have been an end to all argument, for the FACT was unassailable.”

The following passage occurs in a manuscript copy of a lecture delivered in Edinburgh, by Dr. James Gregory, in 1805, on dyspepsia :—“ Spirits are the most hurtful of all things to the stomach : there is an erroneous opinion that they will not hurt when not taken so as to intoxicate ;—it is impossible to express in sufficiently strong terms to dyspeptics, the bad effects of using spirituous liquors, as it is impossible they can recover whilst they employ them.”

In the treatment of these inflammatory affections

of the stomach, nothing need be minded but the maxim, "*causa sublata, tollitur quoque effectus.*" We have seen, in the case of St. Martin, quoted from Dr. Beaumont, that restriction to low diet and simple diluent drinks, removed every appearance of disease from the stomach in the course of three days. Quietude of body and mind, water for drink, and stale bread made of coarse flour for food, are all that ought to be needed till the patient is able to take exercise, and till his appetite becomes good. Bleeding, general or local, will do a great deal towards the rapid cure of the complaint where the patient is young and strong; but it is inadmissible in the cases of the old and weak, or in confirmed drunkards, from the great danger of bleeding in such persons. When the patient is able to take exercise, animal food may be taken, and free perspiration must regularly be excited by work, for a length of time, before the health and strength can be fully restored.

All attempts at *cure* by savoury and tempting articles of diet, and by small doses of stimulants, ought to be reprobated; they are fallacious and only prolong the mischief. Dr. Trotter says, "From the experience I have had in some thousands of these cases, under all the variety in which they usually appear, I freely give it as my opinion, that the only means of cure lie in a total abstinence from every

species of spirit or fermented liquor—from every thing that bears any analogy to them, such as tea, coffee, opium, and all other narcotics; and to regulate the diet, clothing, air, exercise, and passions as becomes a rational being. The improper use of these articles being the chief cause of nervous indisposition, it follows that no recovery can be perfect till they are *in toto* discontinued.”—(Nervous Temperament, p. 279.) Again, in his Essay on Drunkenness, p. 204, he says, “As far as my experience of mankind enables me to decide, I must give it as my opinion, that there is no safety in trusting the habitual inebriate with any limited portion of liquor. Whenever I have known the drunkard effectually reformed, he has at once abandoned his potation. That dangerous degree of debility which has been said to follow the subtraction of vinous stimulus, I have never met with, however universal the cry has been in its favour; it is the war-whoop of alarmists—the idle cant of arch theorists.” Very many authors might be quoted who have given similar testimony on this point, and indeed many also who have stated the opposite; but medical men are not guided by authorities, but by experience. Those who are guided by authorities should consider on this point, who are likely to have been unbiassed observers and faithful witnesses, and value their testimony accordingly.

Those practitioners that prescribe alcoholic drinks indiscriminately, in small doses, in all cases of indigestion, should take into consideration the following remarks by Sir Philip Crampton, in the first vol. of the Dublin Hospital Reports, p. 349, and apply them to the treatment of this form of dyspepsia, which is dependent on inflammation of the mucous membrane of the stomach :—" Mr. B. noticed a circumstance, with respect to the influence of fermented liquors upon this affection, which appears to me to be of considerable importance, as illustrative of the effects of even very small quantities of alcohol, in diseases of an inflammatory nature. He observed, at first, that the pain invariably recurred within an hour after dinner, at whatever time he might have taken that meal, and whether the food had been animal or vegetable. Suspecting that this might be connected with the nature of the liquid, rather than the solid matter which he took into his stomach, he left off fermented liquors. On the first day on which he made this change, the pain did not recur until he had been an hour in bed; this led him to institute a number of experiments upon the influence of different kinds of fermented liquors in different quantities; the result was that the pain could with certainty be excited within an hour by drinking a glass of any kind of fermented liquor, however weak, and a single dram by measure of port wine diluted

with four ounces of water, acted with equal energy as a glass of the undiluted wine."

In this disease, when present in a severe degree, the patient is peculiarly liable to loss of blood from the inflamed mucous membranes. We knew a case in which, for many weeks, the teeth could not be cleaned without bringing on bleeding from the gums; the nose could not be blown without bringing on loss of blood from it; mucus could not be hawked from the throat without blood; and, if vomiting came on in the morning, blood was vomited. The patient died at last from vomiting of blood. This is the origin of the severe attacks of bleeding at the nose and from the stomach, which are met with in habitual drunkards. Such persons also are very liable to inflammation of the bowels, to diarrhœa, and to ulceration of the coats both of the stomach and bowels. They are also very liable to hæmorrhoids, both internal and external, and especially after the liver has become diseased.

Urinary diseases are also very common in drunkards. According to Dr. Christison, the disease of the kidney known as "Bright's Disease," occurs most frequently in those accustomed to the use of alcoholic drinks. Stone and gravel, which are caused by chemical changes in the urine, are also frequently met with in them. In such as are young and strong, of sanguine temperament, or plethoric

habit, we meet with it in the form of deposition of lithates from the urine. The urine of the old and debilitated, and of such as are of nervous temperament, or of a broken down constitution, deposits the phosphates. Retention and incontinence of urine are also frequently brought on by a fit of drunkenness.

CHAPTER VII.

Diseases of the generative function, and hereditary diseases.—Impotence and sterility.—Use by pregnant women injurious to their offspring.—Used by nurses, it injures the child. Diminished fecundity from too rich food.—Instances in plants and the lower animals.—The Rechabites.

DR. DARWIN says, in the “Botanic Garden,” part 2, “It is remarkable that all the diseases from drinking spirituous or fermented liquors, are liable to become hereditary even to the third generation ; gradually increasing, if the cause be continued, till the family becomes extinct.” Sir James Clarke, in his book on Consumption, p. 269, says, “If a more healthy and natural mode of living were adopted by persons in that rank of life which gives them the power of choice, and if more consideration were bestowed on matrimonial alliances, the disease which is so often entailed on their offspring might not only be prevented, but even the predisposition to it be extinguished in their families in the course of a few generations. In the present state of society, it is needless to observe that the reverse of this very commonly happens ; and from the total disregard of the circumstances alluded to, the race often terminates in the third generation.” Plutarch says, “one drunkard begets another.” Aristotle says, “drunken

women bring forth children like unto themselves.” And Dr. Cox says, “that the children of drunkards are as much liable to insanity as those of lunatics.” Mr. George Combe says, in his *Constitution of Man*, p. 356, “The following is a melancholy instance of the operation of this principle, which was communicated to me by a respectable medical practitioner, and which I have since found, from inquiries in the neighbourhood and from seeing the subject of it, to be substantially correct:—

“In the summer of 1827, the practitioner alluded to was called upon to visit professionally, a young woman in the immediate neighbourhood, who was safely delivered of a male child. As the parties appeared to be respectable, he made some enquiries regarding the absence of the child’s father, when the old woman told him that her daughter was still unmarried; that the child’s father belonged to a regiment then in Ireland; that last autumn he had obtained leave of absence to visit his relatives in this part of the country; and that, on the eve of his departure to join his regiment, an entertainment was given at which her daughter attended. During the whole evening she and the soldier danced and sang together; when, heated by the toddy and the dance, they left the cottage, and after the lapse of an hour, were found together in a glen in a state of utter insensibility from the effects of their former festivity,

and the consequence of this interview was the birth of an idiot. He is now nearly six years of age, and his mother does not believe that he is able to recognize either herself or any other individual. He is quite incapable of making signs whereby his wants can be made known—with this exception, that when hungry he gives a wild shriek. This is a case on which it would be painful to dwell; and I shall only remark that the parents are both intelligent, and that the fatal result cannot be otherwise accounted for than by the almost total prostration or eclipse of the intellect of both parties, from intoxication.”

Dr. Trotter says, in his book on Drunkenness, p. 147, “There is scarcely an organ of the human body that does not, in its turn, receive some depravity from habitual temulency. Impotency may be occasioned here by a paralysis of those muscles which are employed in the sexual intercourse, but the appetite itself is certainly destroyed in time: the sot loses all feelings of love. The fair sex ought at all times to show their utter aversion to a drunkard, and to consider it an insult when he dares to approach them. This deportment in the female part of society, would be the strongest preventive against the vice that could be found; for it annihilates all virtuous attachment between the sexes, and is the greatest foe to sentimental love.” Also, in his book on the Nervous Temperament, p. 280, he

says, “ A few years ago, when it was my good fortune to be honoured with unbounded confidence by the naval service, I was consulted by some particular friends of great affluence, on the bad health of their wives, who, to the regret of all connected, had never been in that happy way

‘ Which ladies wish to be who love their lords.’

These ladies, after being married for several years without having children,—devotees of fashionable life, and a prey to painful nervous affections,—are now the mothers of healthy boys and girls, and enjoy the best health imaginable. All these happy changes were effected by little assistance from medical prescription, they were brought about by reversed modes of living.”

A case from Dr. Merriman shows that the use of intoxicating drinks, by pregnant women, may be injurious to their offspring ; a fact well known to all who have made observations on the point.—“ The wife of a coachman had borne one child, healthy and of moderate size. In her second pregnancy she became very fond of gin-and-water. She drank it in large quantities, taking no other liquor but tea, and, frequently, she preferred the gin-and-water to that. Her child, when born, was small and lank—its voice weak, its face wrinkled and ghastly, and its abdomen collapsed ; its skin was mahogany-coloured,

and hung in folds all over its body. The child lived in much suffering for about ten days, and then died in convulsions. In her next pregnancy she could not bear the taste or even smell of gin; her mind was now directed to porter, and of this she drank from three to four pints daily. The child was very large, and still-born."

We do not know that spirit has been found, on chemical analysis, in human milk. But we know that different medicines can be made to act on the infant at the breast through that fluid, by administering them to the nurse; and hence we infer that they pass out of the mother's circulating fluid by that outlet, and that alcohol does the same. Indeed, it is an established rule, in the selection of a wet-nurse, to prefer one who is not addicted to the use of intoxicating liquors; and we find that the children of those women that are addicted to their use, do not thrive till after they have been weaned. They have often the same sickly, emaciated, and wrinkled appearance which is observed in infants who have taken opiates. On this subject the following case from Dr. Ogston's paper is interesting and instructive, p. 287:—"I was requested to inspect the body of James Malone, aged six weeks. He had been apparently in health late on the previous night, and was not known to have had illness at any time previous. At six in the morning he was discovered in

bed dead ; his parents, who had been drinking for several days, having gone out to a tavern. At one the same afternoon the body was examined. The face had an anxious look, and was withered and wrinkled like that of an old person ; it was slightly livid, and the lips blue. Loose folds of integument about the neck and tops of the thighs and arms ; pupils slightly dilated ; tip of the tongue in contact with the incisor teeth ; on one of the thighs were two blue spots not elevated, under which the cellular membrane was red, without any distinct effusion of blood ; fingers semi-bent ; toes turned downwards, and when extended, regained their former position.

“The spinal marrow was healthy ; the cranium adhering firmly to the *dura mater* ; veins on exterior of the brain turgid ; the *pia mater* red, and minutely injected ; the brain firmer than usual at such an early period of life, and when divided, it showed a few bloody points ; and four drachms of serum tinged with blood were collected from the ventricles and base of the skull.

“The lungs were expanded, posteriorly of a deep purple colour ; the lower margins of both lungs hepatized, the middle and upper portions filled with dark fluid blood ; the air-passages healthy, but contained a small portion of frothy muco-purulent fluid in their ultimate divisions. Both ventricles of the heart were empty ; the *foramen ovale* closed, and

both auricles; the pulmonary artery, aorta, and *venæ cavæ* contained dark fluid blood.

“The stomach, contracted to half its usual size, was filled with a yellowish liquid of the consistence of gruel, similar to what was subsequently found in the *duodenum* and gall-bladder, both of which viscera were distended with it; the *jejunum* and *ileum* inflated with gas, without any liquid or solid contents; the colon and *rectum* empty and contracted, and the *omentum* and mesentery were red in several places. The liver exteriorly was of a deep red colour, excepting two yellow patches of the size of a sixpence; its interior dark-hued, and congested with dark fluid blood. The bladder was empty.”

Now, in this case, we suppose, but it is not so *stated*, that the infant had been poisoned by spirit taken through the mother's milk; for we think it not likely that the parents would give it directly to so young a child; and, indeed, it seems they had none to give, seeing that they were off at a tavern to get some for themselves.

It is well known, and will be generally admitted, that over-feeding, and that state of plethora which the use of alcoholic drink and rich food leads to, tend to shorten the duration of life. But it is less generally known, that the same state likewise lessens the fecundity of living beings. This is true, however, both of the animal and vegetable kingdoms of na-

ture. The many-leaved rose of our gardens is the product of cultivation and a rich soil, and has sprung from the common wild briar of our hedges. The wild rose has only one row of petals, but the effect of cultivation and a rich soil is to change the stamina, or *male organs* of the flower, into petals, to the injury of the fecundity of the plant. The potato, which during the last two or three years has failed in Great Britain and Ireland, so remarkably as to threaten us with the total extinction of the plant, is also an example of disease and impaired fecundity from over-cultivation. For, not only is the whole plant in a diseased state, but the crabs or *proper seed* of the plant, are now never seen. We all know the size of the tubers of this plant as it is seen in this country in a state of cultivation, but they are not larger than a hazel-nut when the plant is in a state of nature ; or, as it is found growing wild or spontaneously in America. It is also well known, on the other hand, that plants which have luxuriated in a state of cultivation, when neglected, or transferred to a poor soil, return to a state of nature ; or, in the language of cultivators, run to seed.

Breeders of animals also, know that over-feeding lessens their fecundity. In the instance of sheep, it is found that the number of lambs is in proportion to the pooriness of the pasture which the flocks feed on.

The account of the Rechabites, found in the 35th chapter of Jeremiah, is singularly in point also on this subject ; and their rules of life are remarkably calculated to ensure their purpose, namely, length of days and continuance of race.—“Jonadab the son of Rechab, our father, commanded us, saying, Ye shall drink no wine, neither ye nor your sons for ever : neither shall ye build house, nor sow seed, nor plant vineyard, nor have any : but all your days ye shall dwell in tents ; that ye may live many days in the land where ye be strangers.” — And the blessing of God upon them,—“Because the sons of Jonadab the son of Rechab have performed the commandment of their father, which he commanded them ; therefore, thus saith the Lord God of hosts, the God of Israel, Because ye have obeyed the commandment of Jonadab your father, and kept all his precepts, and done according to all that he hath commanded you ; therefore thus saith the Lord God of hosts, the God of Israel, Jonadab the son of Rechab shall not want a man to stand before me for ever.” Now, these precepts have been followed, and have answered their end, for a period of twenty-seven centuries ; for Dr. Wolff has found that the Rechabites are still in existence at the present day, and still following the commands of Jonadab, their father,—a living monument of the faithfulness of God, and of the permanency of His laws.

CHAPTER VIII.

Diseases of the skin and cellular tissue.—Inability to bear injuries, and surgical operations, and diseases, and loss of blood.—Predisposition to suffer from epidemics.

Skin diseases.—Drunkards are particularly liable to diseases of the skin, and more especially to acne, erysipelas, boils, and carbuncles. The former is well known to be the effect of a habit of vinous indulgence, as some of its vulgar designations indicate. Erysipelas is often met with in drunkards, either occurring spontaneously, or as the result of a slight wound which, in a healthy subject, would be of no importance whatever. The quantity of blood which a drunkard will lose from a wound, or which will be effused under the skin after a bruise, is very great when compared with what will occur in a healthy man from a similar cause. The small amount of swelling, of loss of blood, and of inflammation from, and the rapid recovery after, the severe bruises received in a pugilistic encounter, when a man has been trained to a condition of perfect health in preparation for such an encounter, are well known ; and very remarkable when contrasted with the effects of similar injuries received in a bad state of health or during a debauch.

“Some years ago there flourished a London drayman, of huge proportions, a regular beer-bibber, known by the name of ‘Big Ben.’ Ben was reckoned one of the strongest men within the bills of mortality, and he was occasionally seen showing-off as second in those prize boxing matches which used to delight our moral and intelligent ancestors. When stripped of his upper garments, and engaged in the attitudes of this brutalizing sport, seldom or never had there been exhibited a frame so robust, or one which promised better to endure the shocks which might assail it. ‘There stands,’ you would have said, ‘an invulnerable giant,—death will certainly find it no easy matter to level him.’ Yet, for all this apparent hearty strength, Ben was brought down by an injury which would not have scathed a child. One day his hand received a slight graze from the wheel of a passing carriage on the crowded street. The skin was only ruffled; Ben wiped away the starting blood, and thought no more of the matter.—In one week thereafter, Big Ben was in his grave.”

The bad state of health which is met with in drunkards, is strikingly shown in the evil consequences of surgical operations performed upon them, and is familiar to all surgeons; and they are strongly in contrast with the remarkable recoveries from severe wounds and injuries in savages who have

never been accustomed to the use of strong drink, and who are ignorant of surgical science. The inability to bear disease, or the depletion necessary in the treatment of disease, has been noticed in drunkards by all practitioners of the healing art. The same may also be said of their predisposition to suffer from epidemic diseases.

CHAPTER IX.

Alcohol not necessary as an article of nutriment.—Mode of action of extreme cold on the body.—Alcohol adds to the injurious influence of extreme cold.—The doctrines of Liebig rest on errors as to facts. Influence of exposure to heat.—Alcohol adds to its injurious influence.—Results of experience.—Water the natural drink of man.—Severe labour.—Exercise the only tonic.—Rules of trainers.

DOES physiology or experience teach us, that alcoholic liquors should form part of the ordinary sustenance of man, particularly under circumstances of exposure to severe labour, or to extremes of temperature? Or, on the other hand, is there reason for believing that such use of them is not sanctioned by the principles of science, or the results of practical observation?

Alcohol, not being one of the constituents of the animal body, it seems quite unnecessary to prove that it is not required for its sustenance, under any circumstances.

It is, however, believed to be necessary, in order to enable a man to undergo exposure to extremes of temperature, or to great physical exertion.

In regard to cold, correct physiological views of its action, would lead us to see that alcohol cannot enable us to bear the exposure, but the contrary.—

Cold acts on the body as a sedative; that is, it deprives it of sensibility. We have already shown that respiration is dependent on sensation; and if the sensibility be lessened, sensation is lessened; and so respiration is impaired. And we know that insensibility and drowsiness always accompany fatal exposure to cold. Abundant proofs of this may be found on reading the accounts of the retreat of the French army from Moscow. We have already seen that alcohol is a narcotic, and that it acts in the same way. We think it is plain, therefore, that alcohol must add to the effects of cold, and not diminish them. We admit that a stimulating dose of alcohol—and these stimulating doses are much smaller doses than is generally supposed, and require physical exertion to be used at the same time that they are taken, in order to ensure their stimulant action—will increase the power of the body to resist cold; just as a previous thorough warming of the body, or just as exercise, or any other stimulant, bodily or mental, will do so.—But we believe that exposure to cold would so alter the action of even a small dose of alcohol, as to convert it into a sedative action. In proof that exertion is needed to secure the stimulant action of alcohol, we may notice from Dr. Trotter's book, "that Mr. Spalding, the celebrated diver, always found, after drinking spirits, that the air in his bell was consumed in a shorter

time, than when he drank water." This result is in direct contrast with the results of Dr. Prout's experiments; for he found that the quantity of carbonic acid exhaled at the lungs in a given time, was always lessened during the action of alcohol on the system. But in his experiments, quietude of body would be essential to the performance of them: and "when the effects of the spirit passed off, which they did in Dr. Prout's individual case, with frequent yawnings and a sensation as if he had just awoke from sleep, the amount of carbonic acid exhaled rose much above the natural standard." From these experiments we see the direct tendency to insensibility which alcohol produces; and we must suppose that cold, acting in the same way, would bias the action of even a small dose of alcohol in its own direction.

But the effect of alcoholic drinks on the body, in disabling it to resist cold, are two-fold. There are the debilitating effect of their habitual use; and the soporific effect of the dose taken on the occasion of the exposure, to be taken into the account. The results of experience are in accordance with the principles we have tried to advance. The following cases from "*Bacchus*," p. 374, are very striking. "In 1619, the crew of a Danish ship of sixty men, well supplied with provision and ardent spirit, attempted to pass the winter at Hudson's Bay, but

fifty-eight of them died before the spring; while in the case of an English crew of twenty-two men, in the same circumstances, but destitute of distilled spirit, only two died. In another instance, of eight Englishmen, also without spirituous liquors, who wintered in the same bay, the whole survived, and returned to England; and four Russians left without ardent spirits or provisions, in Spitzbergen, lived for a period of six years, and were at length restored to their country. In the winter of 1796, a vessel was wrecked on an island off the coast of Massachusetts; there were seven persons on board; it was night; five of them resolved to quit the wreck, and seek shelter on shore. To prepare for the attempt, four of them drank freely of spirits, the fifth would drink none. They all leaped into the water, one was drowned before he reached the shore; the other four came to land, and, in a deep snow and piercing cold, directed their course to a distant light. All that drank spirits failed, and stopped, and froze, one after another; the man that drank none reached the house, and about two years ago was still alive."

We must not, however, overlook the fact, that alcohol has the power to prevent what is called "taking cold." In order to this taking cold it is necessary that the sensation of cold should be acutely felt; and it is felt on exposure, in a degree

proportionate to the sensibility of the sufferer. Alcohol, and other narcotics, deprive the body of this sensibility. Intense occupation of mind, as in severe exercise mental or muscular, or in a paroxysm of mania, absorbs it: so that the body becomes insensible for the time, and no feeling of cold exists. Hence the severe exposure of drunkards and of madmen without taking cold, which all have heard of.

The doctrines of Liebig have tended more than any thing else of late years to foster the notion, that alcohol supports the body against cold. He says that alcohol is burnt in the living body, and that by that means it becomes a great supporter of animal heat. He also states, that alcohol, by its superior combustibility, is burnt up in preference to, and before, the worn out materials of the tissues of the body, which are supposed to be the usual matter of combustion; and that "the arterial blood becomes venous, without the substance of the muscles having taken any share in the transformation." He also says, "according to all the observations hitherto made, neither the expired air, nor the perspiration, nor the urine, contains any trace of alcohol, after indulgence in spirituous liquors; and there can be no doubt that the elements of alcohol combine with oxygen in the body; that its carbon and hydrogen are given off as carbonic acid and water." Now it

is not matter of fact that alcohol has not been found in the different excretions of the body. Any one may smell it in the breath of a person who has taken it, as its volatility at the temperature of the living body would lead us to expect, and just as we notice in persons who have taken ether or volatile oils. It has been found by chemical analysis in the bile and urine. Dr. Macnish says, “the perspiration of the wine-drinker is often of the hue of his favourite liquor; after a debauch of Port, Burgundy, or Claret, it is not uncommon to see the shirt or sheets in which he lies, tinted to a rosy colour by the moisture which exudes from his body.” And if the blood does become darker after taking alcohol, it is not from prevention of the change of tissues; but by hindrance to respiration from insensibility. And with regard to the temperature of the body after taking alcohol, Dr. Ogston found the extremities cold in eighteen out of twenty-six cases of intoxication.

Exposure to heat.—When a man lives in a heated atmosphere, he consumes less oxygen in respiration than when in a cold one. The heat, expanding the atmosphere, less oxygen is taken into the lungs at each inspiration; and, hence, a less perfect respiration. Besides this, heat, although a stimulant when made to act as such, becomes the opposite when unduly or continuously applied. Hence the oppression

and debility which men feel in a hot season or climate. We notice the dulness and slowness of combustion in our fires on a hot day, from rarefaction of air, the supporter of combustion; and we feel the languor of dull and slow respiration in ourselves from the same cause. In cold weather, our fires burn cheerily from increased supply of oxygen by condensation of the air; and we feel the same increased supply in ourselves, in the lightness and exhilaration of spirits at the same time.

In hot situations, seasons, and climates, man suffers from the congestion of impeded respiration, and is liable to liver complaints, and to diseases of the stomach and bowels. He feels languid, listless, less able and less inclined to work. From the same cause he perspires freely. Alcoholic drinks must add to the congestion, and therefore to all the evils of it. Experience proves this. Spirituous drinks are injurious in hot climates, and those who take them are soon out of health. It is proved that man can do more work, in hot situations, when he drinks water, than when he drinks beer. The same has been proved of harvest-work, in hot seasons. Perspiration is the natural means of cooling the body; and as this must waste the fluids of the body, thirst is the natural consequence, and water is the natural remedy. In fact, in all living beings, plants and animals, and in man also, nutritious matter can

only be conveyed to its destination when dissolved in water; and excrementitious matter, whether solid or gaseous, can only be separated from the body through the same medium. Hence, water is the natural drink of all living beings. Vegetables know no thirst, or other feeling, and are fixed in their habitations; but water is bountifully supplied to them in the genial and refreshing showers. All animals have thirst; and all animals, except man, are content to gratify it with the drink which God, who does all things well, has furnished for them.—But man, endowed with reason, and the knowledge of good and evil, seems determined always to choose the latter; and he suffers accordingly.—He hath found out many inventions. Much sophistry has been written about the wants of man in a state of nature; and the wants of man when unnatural, or civilized.—God has provided for us the air we breathe, the food we eat, the water we drink, and the clothes we wear;—more than these, he has given us life itself.—But ill-ventilated rooms, fermented and distilled liquors, and badly made clothes, are the creatures of civilization.

Severe labour.—Spirituous and fermented liquors have been used as tonics in preparing a man for, and enabling him to sustain, severe bodily exertion. But if by tonic, we mean that which increases the growth and strength of the muscles, then, certainly,

we have no tonic but one, and that is exercise. "Use strength, and have it," says the proverb ; and the proverb is true in physiology. The temporary feelings of warmth, of stimulation, and of freedom from fatigue, as well as their action as stomachics, which follow a dose of alcoholic drink, have no doubt led to their use for this purpose. But these feelings are very deceptive. We know that men, who are obliged to sleep and work in small and ill-ventilated rooms, gradually become weak and thin from continued imperfection of breathing ; and the taking of narcotics, which impede respiration in the same way, must have the same effect. But in the case of those labourers who only take drink during labour, and who take it in moderation, it does not seem likely that the injurious effect would be great ; for exercise and perspiration are the best means of counteracting the narcotic action, and converting it into a stimulant one.

There are no facts in our judgment more to be trusted, or more convincing, as to the injurious influence of alcoholic drinks, than the experience of those whose business it is, to train men as pugilists and pedestrians. The best of these trainers absolutely forbid all alcoholic drinks, or, which is almost the same, restrict their use to a glass of very diluted sherry and water twice a day. Captain Barclay allowed malt liquor in the forenoon and at dinner,

but none afterwards ; and he insisted on very severe muscular exercise, which would prevent its injurious effects. All trainers of men and animals insist on severe muscular exercise regularly taken. The main rules of their art have been established for more than twenty centuries, and have uniformly proved to be good. They are the result of experience ; and experience consists of the observation of facts ; and with the faculties of the observer in this instance quickened by self-interest, in general the most active of motives.

Experiments of workmen, reports of travellers, and records of armies, all tend to show that the use of these drinks is not beneficial, but injurious to persons subjected to great fatigue. But if a man wishes to be convinced of their injurious influence in this respect, let him read the records of the race-course and of the prize-ring. The general course of pugilists and runners is, after they have attained some celebrity in their way, to become publicans ; and, in that business, to lead a lazy life, and to take daily a considerable portion of intoxicating drink. The consequence of this is, that they soon become too old and weak for their former feats. The trainer cannot again bring them to the same state of strength and endurance as before. In technical language, their “bottom” is gone—and this, too, in many instances, before they have attained the age of thirty.

CHAPTER X.

Wine not needed in old age.—Rule of practice for cases of old drunkards.—The case of nurses who are weak, and deficient of milk.—Rule of Holy Scripture as to the use of wine.

ARE there any special modifications of the bodily or mental condition of man, short of actual disease, in which the occasional or habitual use of alcoholic liquors may be necessary or beneficial?

Wine and other fermented liquors have been recommended and deemed necessary in old age, from the many weaknesses and infirmities of decrepitude. But we think that the illnesses of that period of life are more to be ascribed to the want of the ordinary stimulus of physical exertion, than to the need of any inordinate stimulation. The account furnished to us of Thomas Parr, who died in the year 1635, after having lived one hundred and fifty-two years and nine months, and whose body was examined and reported on by the celebrated Harvey, shows that even he, who had lived so long, so far from needing stimulants, actually shortened his days by the use of them, after his removal to London in advanced age.

Dr. Day says, in a book just published, on the Diseases of advanced Life, “regular habits of life are essential to the well-being of old people. I will

even go so far as to assert, that in many cases it is dangerous to attempt to correct habits which have an acknowledged pernicious effect. The constitution can no longer adapt itself to a change of circumstances. I have witnessed several cases, in which persons at about the age of sixty have become teetotalers, after having drunk freely for a period of perhaps thirty or forty years.—Few of these men have survived to enjoy the moral benefits of the change for more than two or three years. The same is the case with opium-eating.”—Now, there are many diseases to which the body has become so accustomed from their long continuance, that it would be dangerous to cure them.—For example: chronic ulcers, whether occurring spontaneously, or made artificially, as issues; sinuses, in connection with disease of long continuance of the bones or joints; and hemorrhoids, which discharge blood at times. There can be no doubt that these affections are all injurious in the first instance, but the body becomes so accustomed to them in the course of time, that it is then highly dangerous to cure them. Paradoxical as it may seem, these diseases become essential to health. We now no longer hear of “the bad leg of thirty years standing cured by certain patent medicines,” which was so regularly advertised in the public papers some years ago; either from the unfortunate result of the cure, *if* any such cure were

ever effected; or from the humorous and proper remarks in "Punch," of the injustice of calling that a bad leg which had stood for so many years. Surgeons are guided in the treatment of these chronic diseases, by the state of the patient's general health: if this be good, then it is dangerous to cure them; if it suffer, then it is necessary to do so. On the same principle, we should suppose, that the several cases seen by Dr. Day, of persons who had drunk freely for a period of thirty or forty years, were cases where the persons were in other respects healthy; or, they prove nothing as to the evil of giving up long-continued bad habits. And no number of such cases has yet proved, that it is not better for health, and more conducive to long life, to give up the habit of "drinking freely," gradually as to quantity of drink, and wholly for limited periods of time. Variety is good for the body, and we believe that the effect of long habit may thus be got over in safety, and by degrees, even in old persons.

Malt liquors are often recommended to women who are nursing, to promote the secretion of milk, when too scanty; or to prevent or remove the debility of lactation. No doubt they are sometimes remarkably beneficial in this way; but they are dangerous both to nurse and child, and by no means indispensably necessary.

There are so many persons guided, or professing

to be guided, in the use of wine, by the rules of Holy Scripture, that it seems right to glance at what is there said on the subject.

Wine is a good creature of God ; for if it do not grow ready made, the laws of fermentation were of God.—It is spoken of in Scripture as what “maketh glad the heart of man.” It was used at feasts honoured by the presence of the Saviour, and on one occasion, even a miracle was done by him to supply it. It has valuable and indispensable medicinal properties ; and is recommended as medicine in Scripture : and although the use of it as a common beverage is nowhere absolutely forbidden to Christians, the season for the use of it in that way, seems to be clearly limited by Christ to the time when he was with his disciples on earth.—“Can the children of the bridechamber mourn, as long as the bridegroom is with them ? But the days will come, when the bridegroom shall be taken from them, and *then shall they fast.*”—He represented fasting in his presence as unseasonable, unneeded, and injurious ; and illustrated this by the attempt to mend clothes in such way as to make them worse, and to preserve wine in such way as to lose it, and the bottles that held it. When about to be taken from his disciples, he prayed for them and said, “while I was with them in the world, I kept them in thy name.” Also, warning them he said, “the sheep will be scattered,

for I will smite the shepherd.”—Also, “I will not henceforth drink of this fruit of the vine, until that day when I drink it anew with you in my Father’s kingdom;” seems to be quite sufficient for all those who make Christ’s example their rule, to show that there is no time for the use of wine (except in the commemorative ordinance), during all the days of mourning;—till the time when it is promised “they shall plant vineyards, and drink of the wine thereof.”

Wine, however, is set apart to be used by Christ’s disciples in celebration of his supper; and the practice of those teetotalers who forbid the use of wine at the Lord’s table, and substitute infusion of raisins, is a daring interference with an ordinance instituted by God, only equalled by that of the pretenders to sanctity in Cromwell’s day, who would not pray, “thy kingdom come;” but, “thy commonwealth come.”

The principles taught by St. Paul, “it is good neither to eat flesh, nor to drink wine, nor anything whereby thy brother stumbleth, or is offended, or is made weak,” clearly show that Christians ought to be abstinent for the sake of their brethren. And his direction to Timothy, “drink *no longer* water,” proves that in practice Timothy had been a water-drinker by rule.

The arguments of those who say that the wines of Scripture were not intoxicating, seem to our mind

quite trifling, and of no value. If wine is not fermented and intoxicating, then it is not wine. The expressions, "juice of the grape," and "fruit of the vine," seem not to refer to unfermented drink, any more than the expressions, "malt liquor," and "barley-bree," refer to unfermented drink. We therefore repudiate all that has been written about the quality of these wines.

CHAPTER XI.

Use of alcoholic drinks in disease—Wine of no use as a preventative medicine.—To be used as medicine only under medical advice.—Its action as medicine, requires investigation.—Narcotic action of alcohol as a medicine.—Stimulant action as a medicine.—Use in atonic dyspepsia.—In gout of old persons.—In scrofulous persons.—In cases of large and continued discharge of matter.—In the state called convalescence.—In the state called concussion.—In typhus.—Conclusion.

Is the employment of alcoholic liquors necessary in the practice of medicine? If so, in what diseases, or in what forms and stages of disease, is the use of them necessary or beneficial?

We have shewn that the regular use of alcoholic drinks always tends to injure the body, and may induce many diseases. We have already stated, that when a man is regularly subjected to their influence, they render him more liable to suffer from contagious and epidemic diseases, than a man who does not take them. In regard to epidemic cholera, they have a very marked influence in this way; a circumstance which may very likely be accounted for, by the congested state of the abdominal viscera to which they give rise. From this, and from what has been said of their effect when taken under exposure to heat, cold, or great fatigue; we think it is

clearly to be implied that their use as preventatives of disease, ought to be altogether abandoned.—We think also, that they ought in no case to be used medicinally, except under the direction of a regular medical practitioner,—their use being abandoned, like the use of other medicines, as soon as they are no longer needed.

We quite concur with a writer in the *British and Foreign Medical Review*, vol. 24, p. 542, in the following opinion: “We believe that if the question of the therapeutic use of fermented liquors be placed in the same aspect as that on which we have on former occasions attempted to show that the action of almost all our remedies must be at present viewed,—namely, as quite open to that new kind of investigation which consists in the comparison, not of the different methods of treatment one with another, but of the results of each method of treatment with the natural course of the disease,—a great deal of evil of various kinds will soon be done away with.—At present, nothing in the annals of quackery can be more truly *empirical*, than the mode in which fermented liquors are directed or permitted to be taken by a large proportion of medical practitioners.”

Indeed, we believe that the fundamental principle of two new systems of medicine,—homeopathy and dydropathy,—and perhaps their only valuable one,

consists in strict rules as to diet, and abstinence from all medicine—fermented and spirituous drinks among the rest, except when prescribed by the medical attendant.

The *narcotic* action of alcoholic liquors is seldom required in medicine. But they have been used as narcotics in some painful affections of the nerves and muscles, with good effect; for example, in neuralgia of the face, and in sciatica; also in some spasmodic affections of the stomach and bowels.

The *stimulant* action of alcoholic drinks is often called into use medicinally. It is this action which makes it of so great use as a stomachic. It was with a view to this action, that it was recommended to Timothy to “use a little wine for thy stomach’s sake and thy often infirmities.” The dyspepsia of persons of a nervous temperament, produced by over activity of mind, over excitement of the affections and feelings, or anxiety of any kind, is better remedied by small doses of wine than by any other medicine. In this disease the appetite is impaired; and the stomach does not seem to be stimulated to the proper secretion of gastric juice, by the presence of the food taken, unless a small quantity of wine be taken along with it; the excitability of the nervous system seeming to be exhausted by its own activity. No doubt, relaxation and diversion of mind, by travelling and change of air, and by absence

from business, are the *proper* means of cure ; but in the absence of these, alcoholic drinks may be taken in small doses with advantage. A fit of drunkenness, which incapacitates the person, and drowns care and anxiety, and which enforces absence from business by the illness to which it gives rise, is of advantage in these cases in this way, and was favourably spoken of by Celsus in this respect ; but, nevertheless, it cannot be recommended by any right-minded practitioner. It is also incumbent on every medical man to oppose those sanctimonious wine-bibbers, who say that they take wine for the stomach's sake ; but whose stomachs would ail nothing, were they not regularly loaded with burdens hard to be borne, in the shape of food.

A person who has been accustomed to the use of alcoholic drinks, and who entirely gives up the use of them, is apt to be troubled with this form of dyspepsia, (the atonic dyspepsia of medical writers), after three, four, or five months of persistence in the plan of abstinence. This may be the direct effect of the absence of an habitual stimulant, or, as we are more apt to believe, the effect of greater exertion of the nervous system. Abstinence from intoxicating drinks is seldom an isolated part of moral reformation, where it holds out for a time ; otherwise, the resolution would break down under a sense of weariness of life. But, if rightly commenced and

carried out, it is merely a first step in the reform of the whole mental, moral, and physical parts of man; and when so, it may so call out the nervous system into activity, that exhaustion shows itself in the shape of the form of dyspepsia we are speaking of. Relaxation from business, and diversion of mind, are the proper remedy for this state of the stomach; in their absence, wine in small doses may be prescribed.

When a man has regularly accustomed himself to stimulating drinks till he has arrived at old age, and become unable to relieve himself by exercise carried to the length of exciting free excretion from the skin; if he give up the use of his stimulants suddenly and entirely, he often places himself in great danger. A gouty old man, for example, in this situation, will, instead of his regular attacks of gout, become subject to various nervous and dyspeptic affections; or, to sudden seizures referrible to the stomach, heart, or head, and attended by alarming depression of the powers of life.—Under these circumstances, if he do not return to the regulated use of his stimulants, (and in these cases spirituous are better than fermented ones), his life will be cut short, or protracted in misery.

There is, as we have already shown, a remarkable tendency in all diseases which vitiate the blood, to become hereditary. The children of those persons

who live on rich animal food, and who consume large quantities of fermented liquors, or of those that are gouty, are very liable to be afflicted with scrofula : and an indispensable means of managing scrofulous affections in such children, is to give them a diet and regimen similar to that of their parents. We have seen many cases of diseases of the eye or of the scalp in such children, which were only injured by depletion, and which could only be cured by wine and by rich animal food. Indeed, we hold it to be essential in the treatment of many chronic diseases, to restore a patient to a kind of diet and to habits, which he has discontinued, and to which he may have been accustomed for a length of time, or to which his fore-fathers may have been accustomed. This is required in the lower animals : for example, breeders of poultry assert, that if the offspring of fowls, living in a town, be reared in the country, they do not prosper as well as if they were reared in the air in which their parents have lived ; and the same of the offspring of country fowls, when brought up in, or removed to a town.

In diseases which are attended by copious or protracted discharge of purulent matter, as abscess and diseased joints, where the body is wasting, stimulant drinks are often used with great advantage as stomachics. Under these circumstances they increase the appetite for food, and the power to digest it ;

and thus compensate for the drain on the system, and also relieve the pernicious feelings of languor and weakness which the patient suffers in the progress of his complaint.

Stimulating drinks are not generally needed during the period called convalescence, which intervenes between the termination of disease, and restoration of strength. We believe that their use in this state of the body is too much a matter of mere routine : but, nevertheless, the powers of life do, in some instances, seem to flag in this state ; and it is known that if a patient remain stationary in this condition, he is in great danger (and especially if hereditarily predisposed to it), of falling into tubercular disease. There is nothing in these cases so good for rallying the vital energies, as fermented liquors, judiciously given.

The state of the nervous system called shock, or concussion, is also one which calls for the use of alcoholic liquors as a stimulant. It is met with after severe and extensive injuries to the body, and especially to the nervous system ; after sudden and violent mental or moral emotions ; after sudden exposure to heat, as in *coup de soleil*, or extensive burns ; after large draughts of cold drink when the body is hot and exhausted ; after large doses of certain poisons ; after sudden loss of a large quantity of blood ; or, at the commencement of many serious

diseases. This state is seen in “a certain state of syncope or faintness, the heart’s action either suddenly ceasing, or becoming very feeble ; the pulse small or imperceptible, and the surface cold ; at the same time sensation and voluntary motion are suspended immediately.” (Alison’s Pathology.)—Of the diseases which sometimes commence with a state of concussion, apoplexy, inflammation of the brain, of the lungs, of the stomach and bowels, of the peritoneum ; some cases of fever, and of cholera, may be instanced. Under these circumstances, it is always necessary that the patient should recover from the shock to the system, seen at the beginning of his illness, before the disease can properly be said to be established, and certainly before the necessary and proper treatment for the disease can be called for. To ensure or hasten this recovery of the system from shock, it is often necessary that stimulant doses of alcohol should be taken ; and in many cases its use is quite necessary to avert immediate death. The quantity of spirit which is sometimes necessary to be given in these cases, in small and frequent doses, and which can be borne without any symptoms of intoxication, is very great. This is strikingly seen in cases of great loss of blood, and in some cases of cholera. The patient’s feelings of the necessity of spirit, the state of the pulse, and of the surface of his body as to warmth or coldness,

will be sufficient to guide the practitioner in this matter. In the case of concussion of the brain, it is very necessary to be guarded and cautious in the administration of alcohol, on account of the inflammation of that organ, which is the subsequent effect;—indeed, some surgeons, in cases of concussion of the brain, prefer to wait for reaction, without the use of alcoholic stimulants, and trusting to warmth externally applied, and to warm fluids, such as tea, internally taken.

In typhus fever, or in the typhoid stage of common continued fever; in scarlet fever, when it has a typhoid type; in erysipelas with typhoid fever; in typhoid pneumonia; in peritonitis with typhoid fever; or in the typhoid form of puerperal fever;—wine is absolutely necessary to conduct the patient safely through the disease. Typhoid symptoms are known by the patient's lying prostrate on his back; by deafness; by low muttering delirium, particularly in the night, or when the patient's attention is not roused; by stupor, and consequent impeded respiration, quick pulse, and coldness of the extremities. We have frequently exhibited a bottle of port to a patient, or even a quart of brandy, in the course of twenty-four hours, and with the most marked benefit. It abates the delirium and stupor, improves the respiration, lessens the frequency of the pulse, and warms the surface. The patient will continue to

ask for it in these cases, as long as his condition calls for it ; and this demand on his part, together with the general symptoms, are quite sufficient to guide the practitioner in the use of his stimulating medicine. The circumstance of the patient's having previously been accustomed to the use of stimulating drinks, will often make the demand for their use under fever, more absolute and imperative ; and the quantity which can be taken, in small and frequent doses, in these cases, without any consequent symptoms of intoxication, is quite astonishing to persons who have never seen it used for this purpose.

We hope that we have gone far enough in the enumeration of diseases, and stages or states of diseases, which call for stimulating remedies, for all practical purposes. And we trust that we have been sufficiently explicit, in the attempt to describe the states of the body, which call for their use : for we believe that *this* is just what the reader will have expected from us, and what will fully answer his purpose. Throughout the essay we have looked for facts and experience, rather than for opinions ; and we have wished to be guided, in advancing our views, by the established principles of physiology, and of the practice of medicine.

